

*THE UNO AVIATION MONOGRAPH SERIES*

UNOAI Report 99-3

# The Airline Quality Rating 1999

Brent D. Bowen  
Dean E. Headley

April 1999

UNO  
Aviation Institute  
University of Nebraska at Omaha  
Omaha, NE 68182-0508

© 1999, Aviation Institute, University of Nebraska at Omaha

### **UNO Aviation Institute Monograph Series**

Michaela M. Schaaf, *Series Editor*

Mary M. Schaffart, *Production Assistant*

### **Host Organization**

*The University of Nebraska at Omaha*, Dr. Nancy Belck, Chancellor

*Vice Chancellor for Academic Affairs*, Dr. Derek Hodgson

*College of Public Affairs and Community Service*, Dr. David Hinton, Dean

*Department of Public Administration*, Dr. B. J. Reed, Chair

*Aviation Institute*, Dr. Brent D. Bowen, Director

### **Funding Support**

*NASA National Space Grant College and Fellowship Program & NASA EPSCoR*,

Dr. Julius Dasch, Program Manager

*NASA Nebraska Space Grant & EPSCoR Programs*, Dr. Brent D. Bowen, Director

### **Publication**

The UNO Aviation Institute Monograph Series is published at the University of Nebraska at Omaha, 6001 Dodge Street, Omaha, NE 68182.

Published as a not-for-profit service of the Aviation Institute. Funded in part by a grant from the NASA National Space Grant College and Fellowship Program.

The University of Nebraska does not discriminate in its academic, employment or admission policies and abides by all federal, state, and regental regulations pertaining to same.

**The University of Nebraska at Omaha**  
**Aviation Institute**  
**Monograph Series**

**Mission**

The UNO Aviation Institute Monograph Series began in 1994 as a key component of the education outreach and information transfer missions of the Aviation Institute and the NASA Nebraska Space Grant & EPSCoR Programs. The series is an outlet for aviation materials to be indexed and disseminated through an efficient medium. Publications are welcome in all aspects of aviation. Publication formats may include, but are not limited to, conference proceedings, bibliographies, research reports, manuals, technical reports, and other documents that should be archived and indexed for future reference by the aviation and world wide communities.

**Submissions**

Aviation industry practitioners, educators, researchers, and others are invited to submit documents for review and possible publication in the monograph series. The required information is listed in the Submission Checklist, found on the world wide web at:

<http://cid.unomaha.edu/~nasa>

Select UNOAI Monograph Series, select Submission Checklist.

**Dissemination**

The UNO Aviation Institute Monograph Series is indexed in various databases such as Educational Research Information Clearinghouse (ERIC), Transportation Research Information Services (TRIS), Aviation TradeScan, NASA Scientific & Technical Reports (STAR), and the Library of Congress. The series is also cataloged in the UNO Library, which is a member of the Online Computer Library Center (OCLC), an international bibliographic utility. OCLC's Union Catalog is accessible world wide and is used by researchers via electronic database services EPIC and FirstSearch and is also used for interlibrary loans. In addition, copies have been provided to the University of Nebraska - Lincoln and the University of Nebraska at Kearney Libraries. Copies are also provided to the Nebraska Library Commission, the official archive of state publications.

**Ordering**

UNO Aviation Institute monographs are available from the UNO Aviation Institute, Allwine Hall 422, 6001 Dodge Street, Omaha, NE 68182-0508. Order information is also available on the world wide web at <<http://cid.unomaha.edu/~nasa>>, select UNOAI Monograph Series.



# University of Nebraska at Omaha Aviation Institute

## Aviation Monograph Series

---

Recent monographs in the series include:

- 99-3 The Airline Quality Rating 1999
- 99-2 NASA Nebraska EPSCoR Preparation Grant: Year 1
- 99-1 NASA Nebraska Space Grant Consortium 1995-1999 Self-Evaluation
- 98-6 thru 98-9 The Conference Proceedings of the 1998 Air Transport Research Group (ATRG) of the WCTR Society
- 98-3 thru 98-5 The Symposium Proceedings of the 1998 Air Transport Research Group
- 98-2 Aviation Security: Responses to the Gore Commission
- 98-1 The Airline Quality Rating 1998
- 97-9 The Airline Quality Rating 1997
- 97-2 thru 97-8 The Conference Proceedings of the 1997 Air Transport Research Group (ATRG) of the WCTR Society
- 97-1 Aviation Institute Self Study Report for the Council on Aviation Accreditation
- 96-4 The Airline Quality Rating 1996
- 96-3 NASA and Ethics: An Annotated Bibliography
- 96-2 The Image of Airport Security: An Annotated Bibliography
- 96-1 Concentration and Contestability in the Deregulated United States Airline Industry
- 95-2 The Nebraska Initiative for Aerospace Research and Industrial Development

A complete listing of monographs is available at <http://cid.unomaha.edu/~nasa>; select UNO Aviation Monograph Series.

### To Obtain Monographs

Complete this form and include a check or purchase order made payable to the Aviation Institute. Orders within the U.S. are \$7.50 (U.S.) per monograph, and international orders are \$10.00 (U.S.) to cover the costs of printing, shipping, and handling. Allow 4-6 weeks for delivery. Please forward this request to: *Aviation Institute, University of Nebraska at Omaha, 6001 Dodge Street, Omaha, NE 68182-0406*. Phone: 402-554-3424 or 1-800-3 FLY UNO; Fax: 402-554-3781; E-mail: [nasa@unomaha.edu](mailto:nasa@unomaha.edu)

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City, St., Zip \_\_\_\_\_

Country \_\_\_\_\_

Phone \_\_\_\_\_ E-mail \_\_\_\_\_

Quantity	Monograph #	Unit Cost	Total Cost
			\$
			\$
			\$
TOTAL ENCLOSED			\$

*This series is co-sponsored by the NASA Nebraska Space Grant Consortium*



## ABOUT THE AUTHORS

Brent Bowen is Director and Professor, Aviation Institute, University of Nebraska at Omaha. He has been appointed as a Graduate Faculty Fellow of the University of Nebraska System-wide Graduate College. Bowen attained his Doctorate in Higher Education and Aviation from Oklahoma State University and a Master of Business Administration degree from Oklahoma City University. His Federal Aviation Administration certifications include Airline Transport Pilot, Certified Flight Instructor, Advanced-Instrument Ground Instructor, Aviation Safety Counselor, and Aerospace Education Counselor. Dr. Bowen's research interests focus on aviation applications of public productivity enhancement and marketing in the areas of service quality evaluation, forecasting, and student recruitment in collegiate aviation programs. He is also well published in areas related to effective teaching. His professional affiliations include the University Aviation Association, Council on Aviation Accreditation, World Aerospace Education Association, International Air Transportation Research Group, Aerospace Education Association, Alpha Eta Rho International Aviation Fraternity, and the Nebraska Academy of Science. He also serves as program director and principal investigator of the National Aeronautics and Space Administration funded Nebraska Space Grant Consortium.

Dean Headley is Associate Professor of Marketing, W. Frank Barton School of Business, and Faculty Associate of the National Institute for Aviation Research at Wichita State University. He holds a Doctorate in Marketing and Statistics from Oklahoma State University, a Master of Business Administration Degree from Wichita State University, and a Master of Public Health Degree from the University of Oklahoma. Dr. Headley's research interests include methodology development for measurement of service quality, the connection between service quality and consumer behavior, consumer choice processes in service settings, and the effects of marketing activities on consumers and providers of services.

Collectively, Dr. Bowen's and Dr. Headley's research on the Airline Quality Rating (AQR) has met with widespread acceptance and acknowledgment. The Airline Quality Rating has been featured on *ABC's Good Morning America*, *The Cable News Network*, *The Today Show*, on network news, in *USA Today*, in *Aviation Week and Space Technology*, and in numerous other national and international media. Bowen and Headley have served as invited expert witnesses before the U.S. House of Representatives Committee on Government Operations and have served on multiple occasions as invited speakers and panelists for such groups as the National Academy of Sciences/Transportation Research Board. Resulting from work with the Airline Quality Rating, Bowen and Headley have been recognized with awards from the American Marketing Association, the American Institute of Aeronautics and Astronautics, Embry-Riddle Aeronautical University, the Travel and Transportation Research Association, W. Frank Barton School of Business, and others. The AQR research has been published in the *Journal of Aviation/Aerospace Education and Research*, *Journal of Air Transportation World Wide*, *Advances in Marketing*, *Business Research Methods*, as well as other journals, proceedings, text books, and research monographs.





## AIRLINE QUALITY RATING 1999

Brent D. Bowen, University of Nebraska at Omaha  
Dean E. Headley, Wichita State University

### Abstract

The Airline Quality Rating (AQR) was developed and first announced in early 1991 as an objective method of comparing airline performance on combined multiple criteria. This current report, Airline Quality Rating 1999, reflects an updated approach to calculating monthly Airline Quality Rating scores for 1998. AQR scores for the calendar year 1998 are based on 15 elements that focus on airline performance areas important to air travel consumers.

The Airline Quality Rating 1999 is a summary of month-by-month quality ratings for the ten major U.S. airlines operating during 1998. Using the Airline Quality Rating system of weighted averages and monthly performance data in the areas of on-time arrivals, involuntary denied boardings, mishandled baggage, and a combination of 12 customer complaint categories, major airlines comparative performance for the calendar year of 1998 is reported. This research monograph contains a brief summary of the AQR methodology, detailed data and charts that track comparative quality for major airlines domestic operations for the 12 month period of 1998, and industry average results. Also, comparative Airline Quality Rating data for 1997, using the updated criteria, are included to provide a reference point regarding quality in the industry.

### The Airline Quality Rating (AQR) System

The majority of quality ratings available rely on subjective surveys of consumer opinion that are infrequently done. This subjective approach yields a quality rating that is essentially noncomparable from survey to survey for any specific airline. Timeliness of survey-based results can be a problem as well in the fast paced airline industry. Before the Airline Quality Rating, there was effectively no consistent method for monitoring the quality of airlines on a timely, objective and comparable basis. With the introduction of the AQR, a multi-factor, weighted average approach became available that had not been used before in the airline industry. The method relies on taking published, publicly available data that reports actual airline performance on critical quality criteria important to consumers and combines them into a rating system. The final result is a rating for individual airlines with ratio scale properties that is comparable across airlines and across time.

The Airline Quality Rating (AQR) is a weighted average of 15 elements (see Table 1) important to consumers when judging the quality of airline services. Elements considered for inclusion in the rating scale were screened to meet two basic criteria; 1) an element must be obtainable from published data sources for each airline; and 2) an element must have relevance to consumer concerns regarding airline quality. Data for the 15 elements used in calculating the ratings represent performance aspects (on-time arrival, mishandled baggage, denied boardings, and 12 customer complaint areas) of airlines that are important to consumers. All of the 15 elements are reported in the *Air Travel Consumer Report* maintained by the Department of Transportation.

Weights were established by surveying 65 airline industry experts regarding their opinion as to what consumers would rate as important (on a scale of 0 to 10) in judging airline quality. Also, each weight and element were assigned a plus or minus sign to reflect the nature of impact for that criterion on a consumer's perception of quality. For instance, the criteria of on-time arrival performance is included as a positive element because it is reported in terms of on-time successes, suggesting that a higher number is favorable to consumers. The weight for this criteria is high due to the importance most consumers place on this aspect of airline service. Conversely, the criteria that includes mishandled baggage is included as a negative element because it is reported in terms of mishandled bags per passengers served, suggesting that a higher number is unfavorable to consumers. Because having baggage arrive with passengers is important to consumers the weight for this criteria is also high. Weights and positive/negative signs are independent of each other. Weights reflect importance of the criteria in consumer decision making, while signs reflect the direction of impact that the criteria should have on the consumer's rating of airline quality. When all criteria, weights and impacts are combined for an airline and averaged over the year, a single continuously scaled value is obtained. This value is comparable across airlines and across time periods.

Of the 15 elements included under the four areas of on-time arrivals, involuntary denied boardings, mishandled baggage, and customer complaints used to calculate the Airline Quality Rating, 1999, 11 have always been part of the performance elements used to calculate AQR scores in past years. With seven years of historical data available using the same elements and the same methods of gathering and calculating the AQR scores, a close look at the value and importance of the various elements was possible. Using correlations and regression analysis to look for significant relationships between individual elements and the overall AQR score for the various airlines across the years, a reduced number of elements began to emerge as most useful in explaining performance quality of an airline. As one might intuitively expect, the elements that emerged were generally those with the highest weights. Review of available research from other scholars and within the industry also confirmed the argument for a reduced number of criteria to be used in calculating the AQR scores. With the weight of evidence clear, the elements of average age of fleet, number of aircraft, load factor, pilot deviations, number of accidents, frequent flyer awards, financial stability, and average seat-mile cost have been dropped from the calculation formula for the Airline Quality Rating, 1999.

The updated Airline Quality Rating criteria and the weighted average methodology allows a very focused comparison of major airline domestic operations. Unlike other consumer opinion approaches which rely on consumer surveys and subjective opinion, the AQR continues to use a mathematical formula that takes multiple weighted objective criteria into account in arriving at a single, fully comparable rating for the airline industry. The Airline Quality Rating provides both consumers and industry watchers a means for looking at comparative quality for each major airline on a timely basis using objective, performance-based data. In the past, the Airline Quality Rating has often been cited as an industry standard for comparing airline performance. With the updated criteria and the use of Department of Transportation data, the argument becomes even stronger for the Airline Quality Rating to be used as a standard method for comparing the quality of airline performance.

Table 1

**AIRLINE QUALITY RATING CRITERIA, WEIGHTS AND IMPACT**

	CRITERIA	WEIGHT	IMPACT (+/-)
OT	On-Time*	8.63	+
DB	Denied Boardings*	8.03	-
MB	Mishandled Baggage*	7.92	-
CC	Customer Complaints	7.17	-
	Flight Problems* (-8.05)		
	Oversales		
	Reservations, Ticketing, Boarding, and Disability* (-7.08)		
	Fares* (-7.60)		
	Refunds* (-7.32)		
	Baggage		
	Customer Service* (-7.20)		
	Smoking		
	Advertising* (-6.82)		
	Credit* (-5.94)		
	Tours		
	Other* (-7.34)		

\*These elements were also included as original AQR factors.

Data for all criteria is drawn from the Department of Transportation's monthly *Air Travel Consumer Report*.

The formula for calculating the AQR score is:

$$\text{AQR} = \frac{(+8.63 \times \text{OT}) + (-8.03 \times \text{DB}) + (-7.92 \times \text{MB}) + (-7.17 \times \text{CC})}{(8.63 + 8.03 + 7.92 + 7.17)}$$

Elements not included in the AQR, 1999: Avg Age of Fleet (-5.85); Number of Aircraft (+4.54); Load Factor (-6.98); Pilot Deviations (-8.03); Number of Accidents (-8.38); Frequent Flyer Awards (-7.35); Financial Stability (+6.52); Avg Seat-Mile Cost (-4.49)

## What the Airline Quality Rating Tells Us About 1998

Since the Airline Quality Rating is comparable across airlines and across time, monthly rating results can be examined both individually and collectively. The pages following these summary comments outline the AQR scores by airline, by month for 1998. For comparison purposes, results for individual airlines are also displayed for 1997. A composite industry average chart that combines the ten airlines tracked is shown. With a reduced set of criteria that are performance based, we saw some changes in the order of the AQR scores in 1998.

The Airline Quality Rating industry average score shows an industry that is declining in quality relative to customer performance criteria. US Airways and Continental were the best and most consistent performers of the ten major airlines operating in the U.S. for 1998. American, Delta, Southwest, and America West made up a closely competitive group in the middle. A third group, Trans World, Alaska, Northwest, and United were not performing at the same level as other major airlines across all of the AQR criteria. The AQR results for 1998 indicate that:

- US Airways had the best average AQR score in 1998. Looking at some of the details reveals that US Airways improved in the areas of denied boardings (second lowest among the majors) and mishandled baggage (3.5% decrease from 1997). They reflected the overall trend in the industry, however, with a 7.7% increase in the number of consumer complaints over 1997.
- Continental Airlines showed a steady performance quality in 1998, with the second highest AQR score. Better than industry average performance in the areas of on-time arrivals, mishandled baggage, and consumer complaints made for a solid result. Continental's industry best denied boardings rate also contributed positively to their rating score.
- American Airlines AQR score for 1998 reflects their better performance in on-time arrivals (second highest of the majors at 80.1%), fewer denied boardings (27% fewer than 1997), and fewer mishandled bags (9.7% fewer than 1997). American, like all other airlines, had a higher volume (7.5%) of consumer complaints in 1998.
- Delta Airlines AQR score for 1998 reflects improved performance in on-time arrivals (third best of the majors at 79.6%), denied boardings (14.4% fewer), and mishandled bags (5.9% fewer). They did follow the industry and post an increase (23.4% more than in 1997) in consumer complaints.
- Southwest Airlines performance for 1998 placed them in the middle of the pack. They recorded the best annual average on-time arrival percentage (80.8%) of the major carriers, a 20.0% decrease in denied boardings (still twice the industry average), and worse performance on mishandled bags (15.6% worse). Southwest had the fewest number of complaints per passenger flown of all the major airlines, and actually reduced the 1998 volume of complaints by 10.7% over 1997 levels.
- America West had the worst on-time performance (68.5%) of all the major airlines in 1998. Above industry average denied boardings were also a source of performance concerns, as was the second worst ratio of consumer complaints per passenger served. On a bright note, America West had the best baggage handling record of all airlines rated.

- Trans World Airlines improved performance in 1998 over 1997 in only one area, mishandled baggage. On-time performance, consumer complaint rates, and denied boardings (double the rate for 1997) were all worse in 1998.
- Alaska Airlines had bright spots in 1998 in the areas of fewer denied boarding (less than half the 1997 rate) and fewer consumer complaints (second lowest of the major airlines) per passenger flown than in 1997. On the down side, Alaska Airlines had a lower on-time performance (71.9%) in 1998 than in 1997 (75.4%) and a worse baggage handling result (second worst of the major airlines) for 1998.
- Northwest Airlines posted the second worst on-time arrival performance in the industry (70.6%) which was a decline from 1997 on-time performance. Their performance on baggage handling was worse in 1998 as well. Their consumer complaint rate in 1998 was the highest of all the major airlines (twice the industry average) and continued a trend seen in 1997. The bright spot for Northwest Airlines was in the area of denied boardings, where they improved over their 1997 rate.
- United Airlines had a lower on-time arrival percentage for 1998 (73.8%) than in 1997, a worse baggage handling record (worst of all the major airlines) in 1998, a higher rate of denied boardings, and a higher number of complaints per passenger served. All of these combined to pull United down to the lowest performing carrier.
- For 1998 the overall industry average AQR score was lower than in 1997. As an industry, the AQR criteria show that on-time percentage declined slightly (77.2% in 1998 and 77.9% in 1997), denied boarding per passenger served improved ( 0.87 per 10,000 passengers in 1998 as compared to 1.06 per 10,000 passengers in 1997), mishandled baggage rates worsened (5.16 per 1,000 passengers in 1998 verses 4.96 per 1,000 passengers in 1997), and consumer complaint rates increased (1.08 per 100,000 passengers in 1998 compared to 0.86 per 100,000 passengers in 1997) by over 25%. This continued increase in complaints (1997 showed a 20% increase over 1996 complaint levels) reflects consumer frustration with a financially recovered industry and a lack of performance in basic consumer areas. Increased consumer dissatisfaction expressed by an increased volume of complaints seems to indicate that how things are done is just as important as what gets done, and that the consumer may be reaching the limits of tolerance.

## Observations About the Industry

As measured by the Airline Quality Rating, quality for the airline industry decreased in 1998. Continued financial recovery, consumer dissatisfaction, and an absence of fatal airline accidents were the hallmark of the airline industry in 1998. There are many issues which face the industry in 1999 and beyond. Looking ahead we see that:

- Declining industry quality in 1998 gives reasonable cause for Congress to pass the Airline Passenger Fair Treatment Initiative, commonly called the Airline Passengers' Bill of Rights. This consumer-oriented measure would require airlines to provide accurate and timely information to consumers about problems and flight delays, increase reporting requirements regarding consumer complaints, increase airline liability regarding lost or damaged luggage, and increase penalties for involuntary denied boardings.
- Profitability in the industry remains strong due to increasing demand, reduced costs, and higher fare prices. Huge savings resulting from fuel cost reductions are slowing with the return to higher fuel costs. With profits continuing, labor concession of the past will undoubtedly be revisited as labor negotiations come due for all but two of the major domestic airlines. This should be a priority for the airlines, because when employees are in disagreement with management, it is difficult to expect that employees will not express their negative attitudes in ways that affect consumers.
- Failure by the FAA to effectively modernize the entire National Airspace System with up-to-date technology will soon have more visible effect on consumers. Going beyond ATC modernization, the FAA must expedite implementation of GPS navigation and approaches, free-flight, data-link and other enhancements to capacity. Expect the industry to begin to press more ardently for the release of the \$10 billion reserves in the Aviation and Airways Trust Fund.
- The FAA/DOT reports that air travel passenger volume will continue to expand at a moderate pace both domestically (3.4% per year thru 2010) and internationally (5.1% per year thru 2010). The continuing growth will hasten arrival at the point of saturation for the hub and spoke system during the first decade of the next century. Factoring this growth into an increasingly dissatisfied consumer base will undoubtedly lead to a continued increase in consumer complaints. Consumers are demanding point-to-point air service availability. Increased congestion of hubs and new, smaller economical jet aircraft will produce opportunities for route structures that meet consumer needs in a changing airline environment.
- Consumer concern regarding safety and security has not been sufficiently addressed. Recommendations from safety commissions and reports from recent disasters are not being adequately communicated and implemented. It appears to the flying public that we are awaiting another disaster to strike before further action will result. Additionally, the airlines and the government are not acting quickly enough to alleviate growing public apprehension regarding Y2K. Even with recent successful tests of the ATC systems regarding Y2K, the public is skeptical and this apprehension may lead to a reduction in public travel scheduled during January of 2000.

- Airlines are beginning to initiate anti-consumer oriented rules. These rules seem designed to manage passengers into patterns which some airlines think will improve productivity. Examples include limiting carry-on bags requirements, disallowing carry-on food and beverages, limiting pre-boarding with children and then requiring them to sit in the back of the aircraft, not allowing a consumer to take an earlier connection when a seat is available, increasing change of ticket fees, limiting use of child safety seats, blocking out window and aisle seats based on ticket price and standing in a frequent flyer club, not providing accurate information on delays, and constantly changing frequent flyer programs to the consumer's disadvantage (ie. basing awards on ticket price, rather than miles, reflecting the airline's own disparity in pricing). Soon, consumers will become driven by price and schedule only and regard airline loyalty as having no tangible value.
- Electronic accesses to the airlines are a benefit to many consumers. However, the airlines are rushing to circumvent costs associated with travel agent and phone reservations and sometimes levy fees for these services most often used by the flying public. Internet ticketing and ticketless bookings are areas that both consumers and airlines are watching. At present, this provides a mechanism for greater access and greater disparity in pricing which fills last-minute seats cheaply, thus seemingly benefiting both parties. Revenue of substance will not be realized until greater advantages entice high-end consumers to buy on-line. The rapid move by airlines to taking out the travel agents position in the distribution channel seems premature. Caution, more thought and planning needs to be given before hastily relying too heavily on this new method of distribution.
- Mega-carrier relationship agreements continue to appear. Many airlines seem to feel that they must be all things to all consumers and go all places. It appears that quality customer service is being replaced with attitudes of domination and desires to service all routes, profitable or not. This approach will certainly make some carriers stronger but leave others in troubled relationships, facing potential bankruptcy or merger.
- Stage 3 readiness (noise abatement) is fast approaching a deadline in the year 2000. While airlines are making good efforts to meet the requirements, as much as 20% of the U.S. jet fleet still does not fully meet the federal guidelines for the year 2000. This should continue to affect the activity seen in new aircraft manufacturing, purchasing, and related industries.

## Previous Airline Quality Reports

Bowen, Brent D., Dean E. Headley and Jacqueline R. Luedtke (1991), Airline Quality Rating, National Institute for Aviation Research Report 91-11, Wichita, Kansas.

Bowen, Brent D., and Dean E. Headley (1992), Airline Quality Rating Report 1992, National Institute for Aviation Research Report 92-11, Wichita, Kansas.

Bowen, Brent D., and Dean E. Headley (1993), Airline Quality Rating Report 1993, National Institute for Aviation Research Report 93-11, Wichita, Kansas.

Bowen, Brent D., and Dean E. Headley (1994), Airline Quality Rating Report 1994, National Institute for Aviation Research Report 94-11, Wichita, Kansas.

Bowen, Brent D., and Dean E. Headley (1995), Airline Quality Rating Report 1995, National Institute for Aviation Research Report 95-11, Wichita, Kansas.

Bowen, Brent D., and Dean E. Headley (1996), Airline Quality Rating 1996, W. Frank Barton School of Business, Wichita, Kansas.

Bowen, Brent D., and Dean E. Headley (1997), Airline Quality Rating 1997, W. Frank Barton School of Business, Wichita, Kansas.

Bowen, Brent D., and Dean E. Headley (1998), Airline Quality Rating 1998, W. Frank Barton School of Business, Wichita, Kansas.

For more information contact either:

Dr. Dean E. Headley, Associate Professor  
W. Frank Barton School of Business  
Wichita State University  
304 Clinton Hall  
Wichita, KS 67260-0084

Office: (316) 978-3367  
FAX: 316-978-3276  
E-mail: headley2@twsuvm.uc.twsu.edu

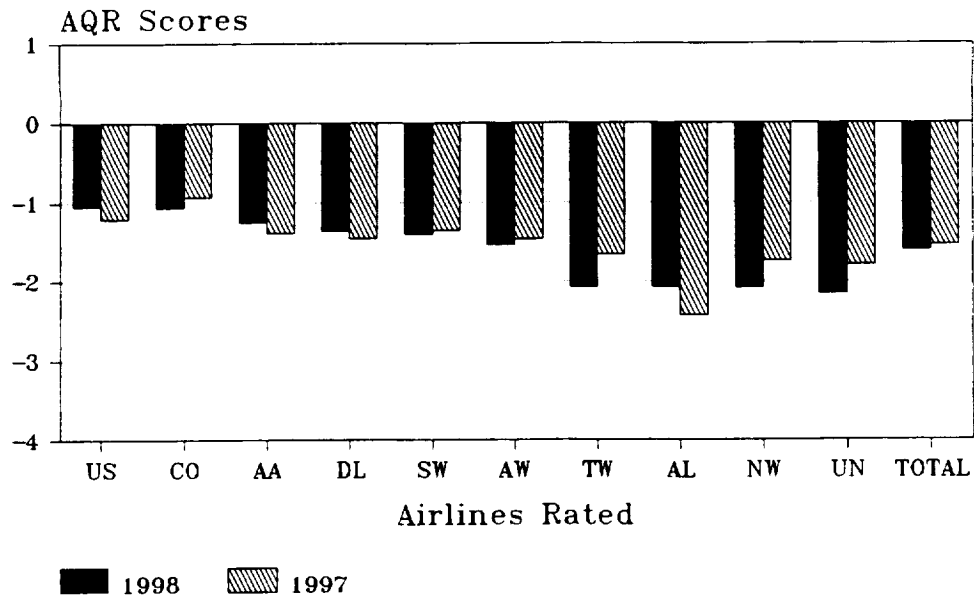
Dr. Brent D. Bowen, Director  
Aviation Institute  
University of Nebraska at Omaha  
Allwine Hall 422  
Omaha, NE 68182-0508

Office: (402) 554-3424  
FAX: 402-554-3781  
E-mail: unoai@unomaha.edu



# AIRLINE QUALITY RATING

## AVERAGE AQR SCORES

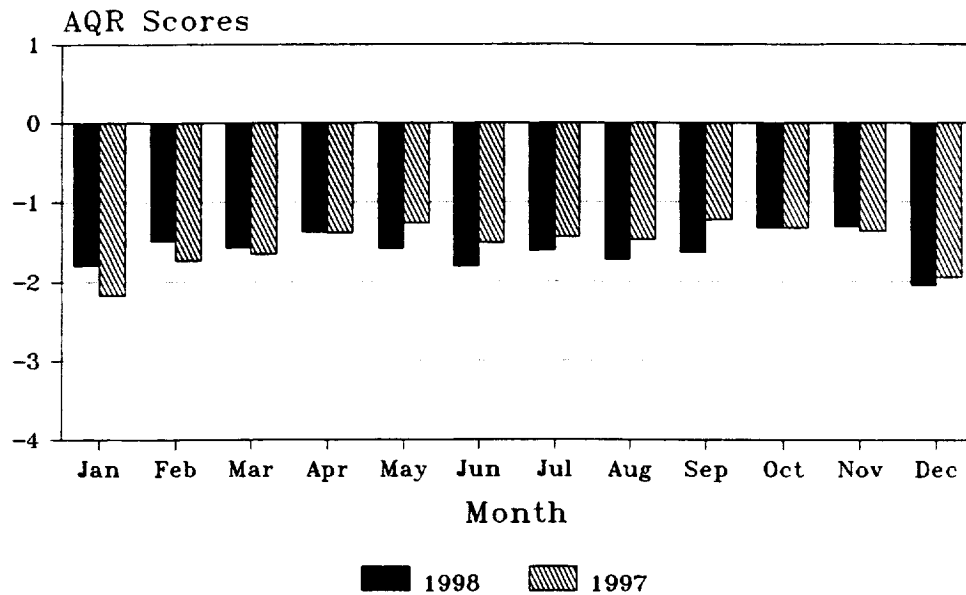


All Major U. S. Airlines  
Average AQR Scores

	1998	1997
US Airways	-1.053	-1.211
Continental	-1.068	-0.926
American	-1.256	-1.391
Delta	-1.366	-1.462
Southwest	-1.408	-1.360
America West	-1.540	-1.473
Trans World	-2.076	-1.666
Alaska	-2.077	-2.427
Northwest	-2.079	-1.743
United	-2.155	-1.796
Industry Average	-1.609	-1.546

# AIRLINE QUALITY RATING

## ALL MAJOR U.S. AIRLINES

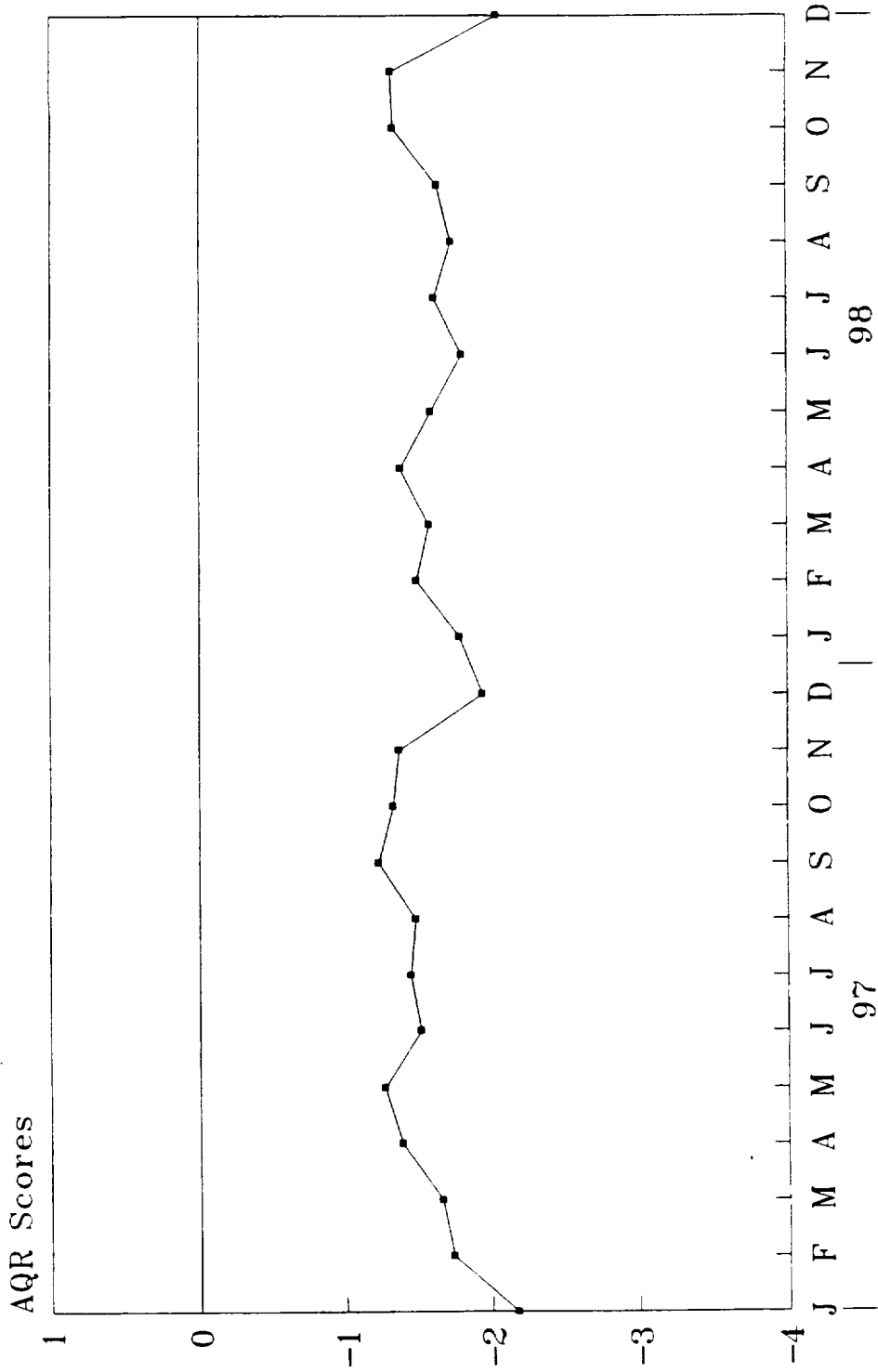


### All Major U.S. Airlines Average Monthly AQR Scores

	1998	1997
January	-1.789	-2.172
February	-1.494	-1.736
March	-1.579	-1.658
April	-1.383	-1.387
May	-1.589	-1.269
June	-1.805	-1.517
July	-1.614	-1.449
August	-1.732	-1.482
September	-1.636	-1.227
October	-1.335	-1.331
November	-1.317	-1.373
December	-2.049	-1.945
Industry Average	-1.609	-1.546

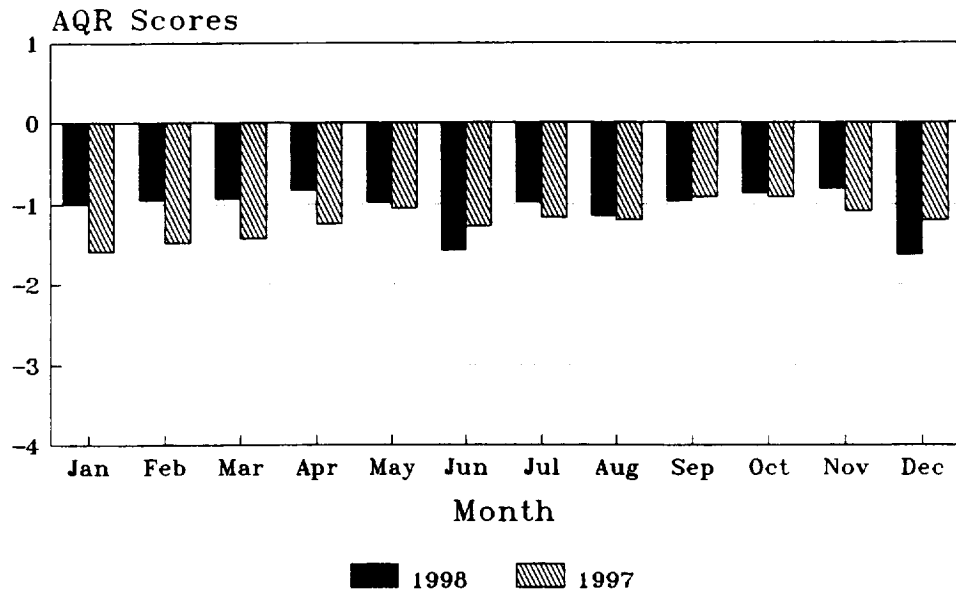
# AIRLINE QUALITY RATING

ALL MAJOR AIRLINES 1997 - 1998



# AIRLINE QUALITY RATING

## US AIRWAYS

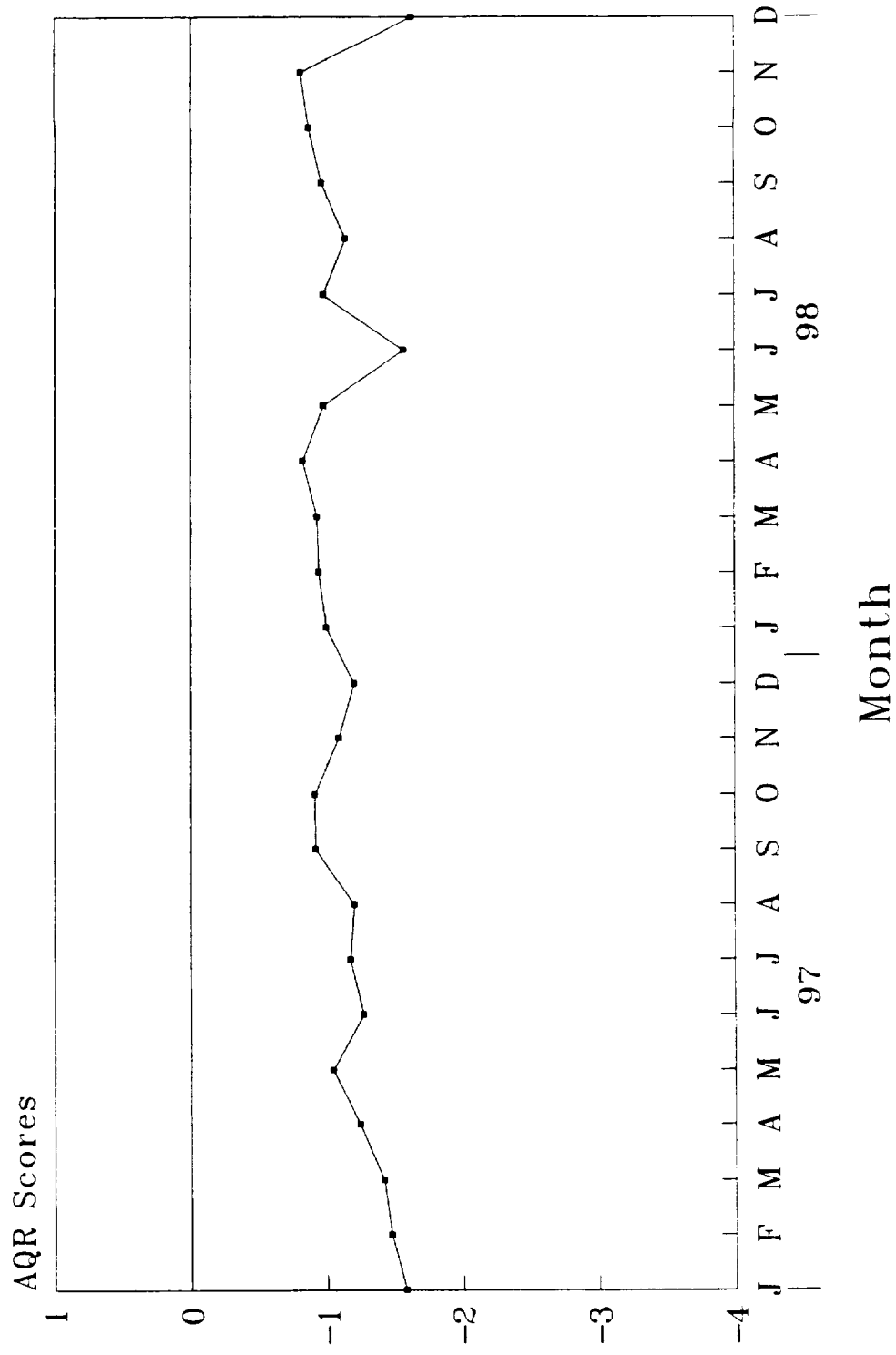


### US Airways Monthly AQR Scores

	1998	1997
Jan	-0.998	-1.583
Feb	-0.945	-1.476
Mar	-0.930	-1.418
Apr	-0.828	-1.242
May	-0.979	-1.048
Jun	-1.570	-1.269
Jul	-0.977	-1.170
Aug	-1.144	-1.201
Sep	-0.964	-0.916
Oct	-0.871	-0.914
Nov	-0.810	-1.092
Dec	-1.624	-1.203
Airline AQR Score	-1.053	-1.211
Industry AQR Score	-1.609	-1.546

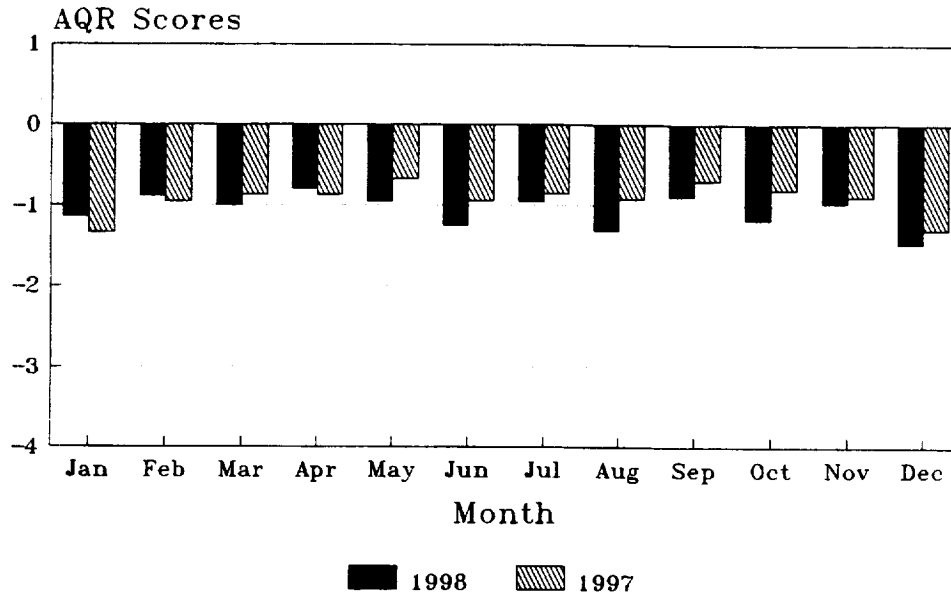
# AIRLINE QUALITY RATING

US AIRWAYS 1997 - 1998



# AIRLINE QUALITY RATING

## CONTINENTAL

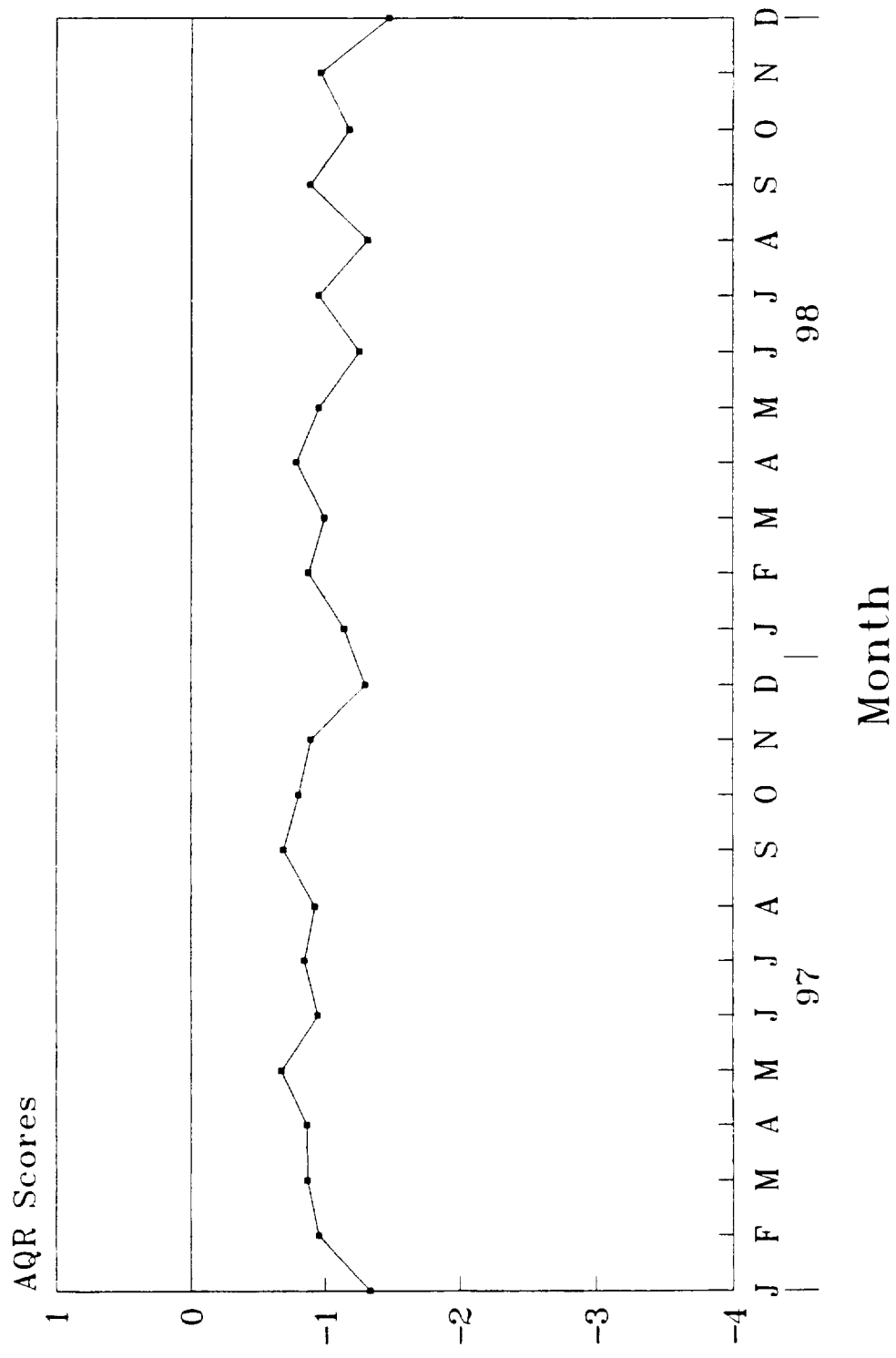


### Continental Airlines Monthly AQR Scores

	1998	1997
Jan	-1.147	-1.338
Feb	-0.880	-0.955
Mar	-1.001	-0.869
Apr	-0.787	-0.866
May	-0.957	-0.674
Jun	-1.257	-0.949
Jul	-0.956	-0.848
Aug	-1.317	-0.924
Sep	-0.891	-0.690
Oct	-1.184	-0.805
Nov	-0.970	-0.895
Dec	-1.473	-1.302
Airline AQR Score	-1.068	-0.926
Industry AQR Score	-1.609	-1.546

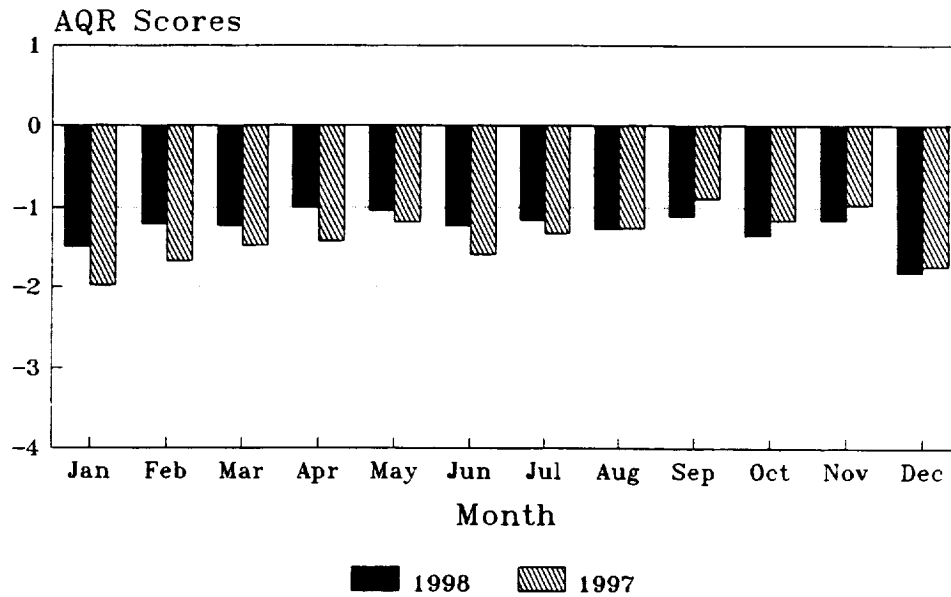
# AIRLINE QUALITY RATING

## CONTINENTAL 1997 - 1998



# AIRLINE QUALITY RATING

## AMERICAN AIRLINES



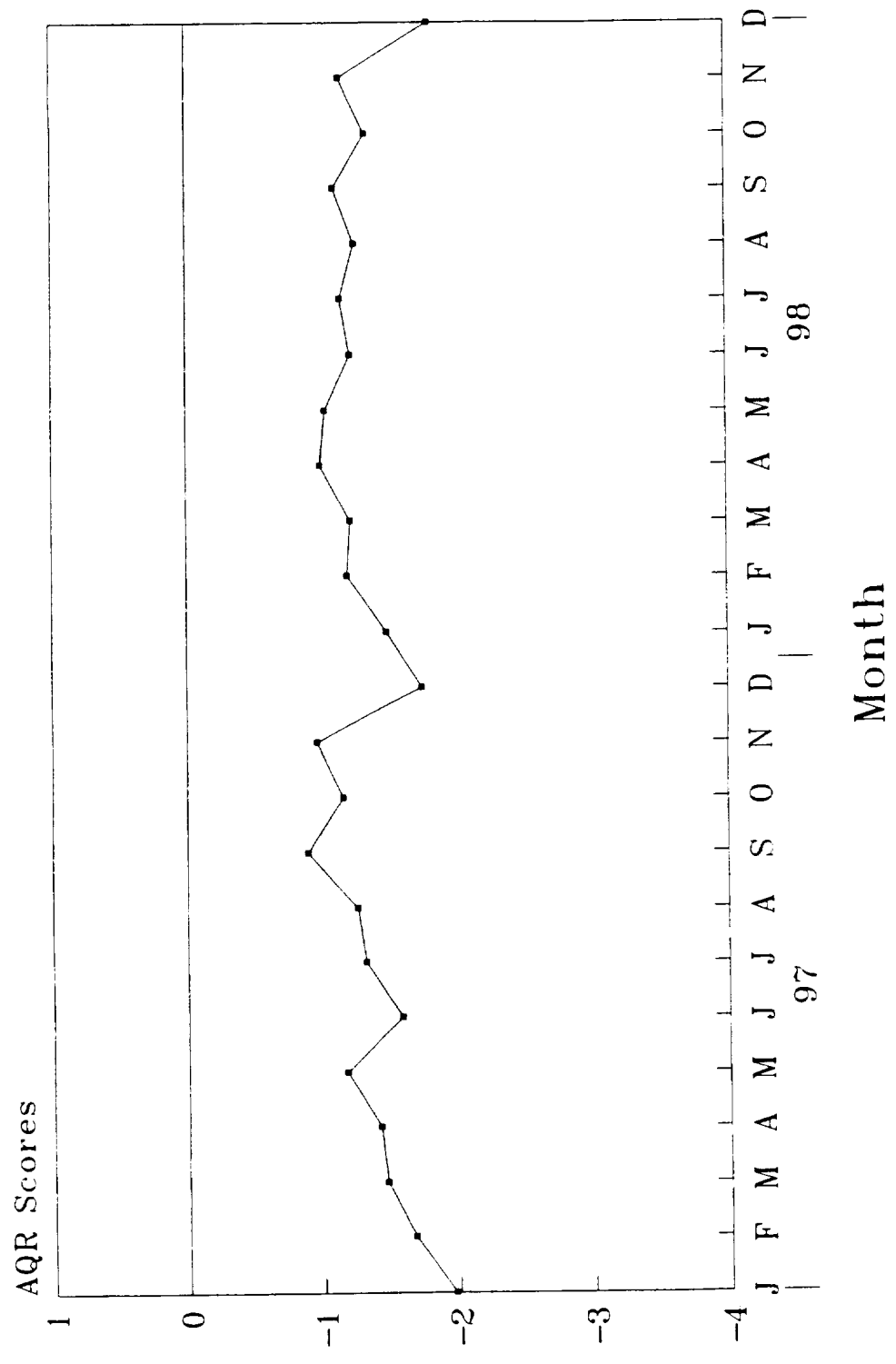
### American Airlines Monthly AQR Scores

	1998	1997
Jan	-1.490	-1.974
Feb	-1.204	-1.675
Mar	-1.230	-1.473
Apr	-1.005	-1.425
May	-1.043	-1.181
Jun	-1.234	-1.592
Jul	-1.157	-1.328
Aug	-1.267	-1.265
Sep	-1.116	-0.895
Oct	-1.351	-1.164
Nov	-1.159	-0.968
Dec	-1.814	-1.746
Airline AQR Score	-1.256	-1.391
Industry AQR Score	-1.609	-1.546



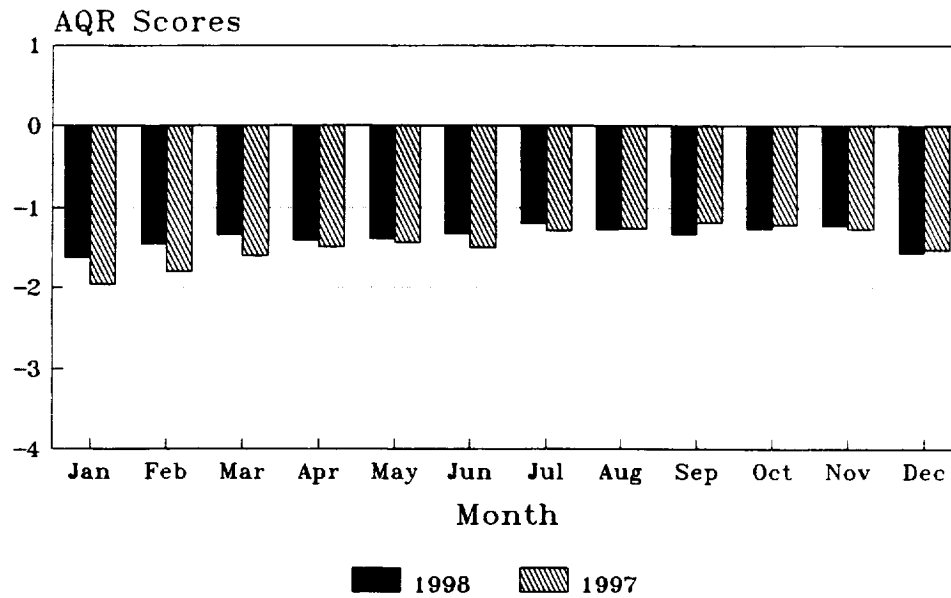
# AIRLINE QUALITY RATING

## AMERICAN 1997 - 1998



# AIRLINE QUALITY RATING

## DELTA

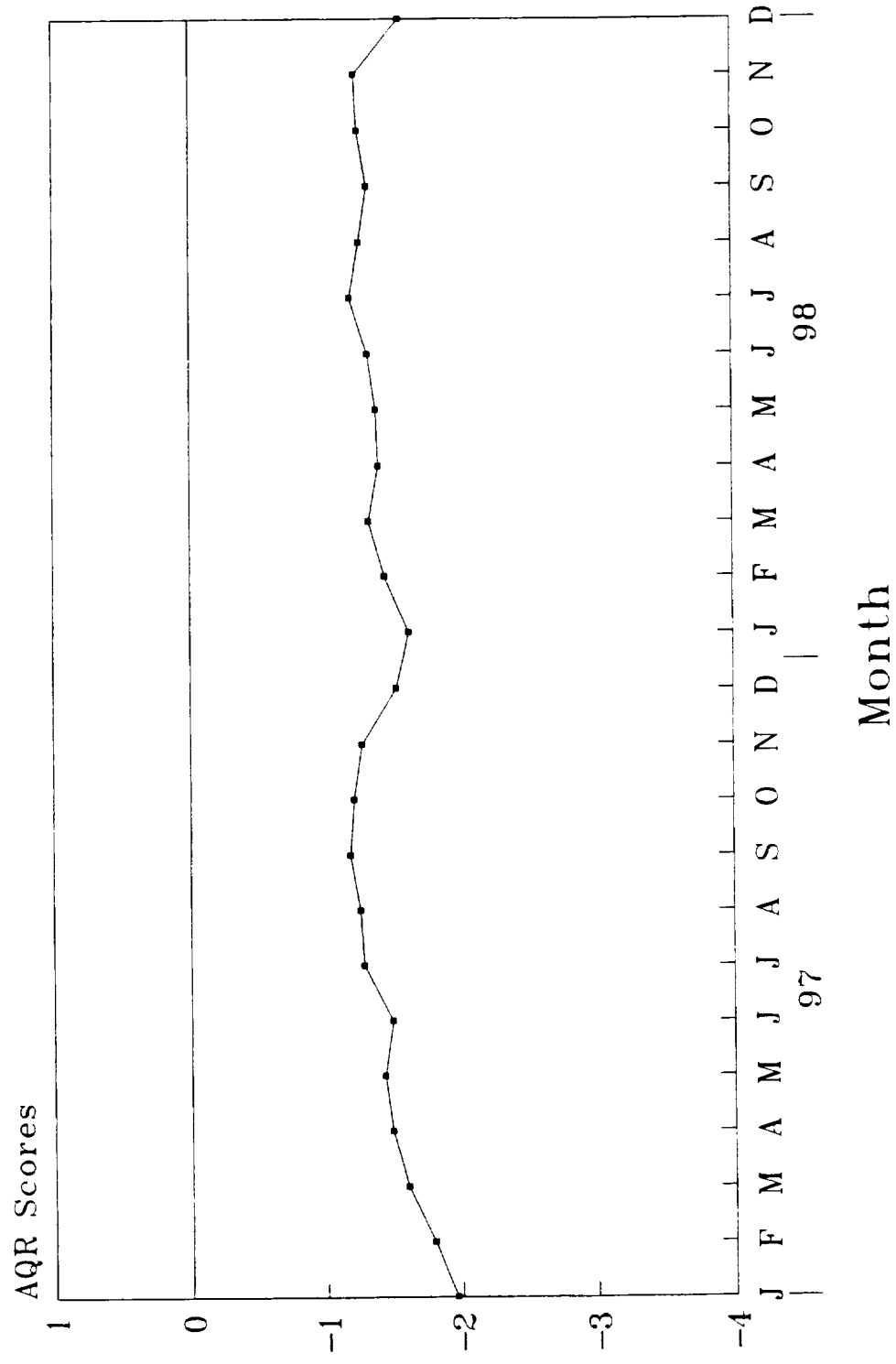


### Delta Airlines Monthly AQR Scores

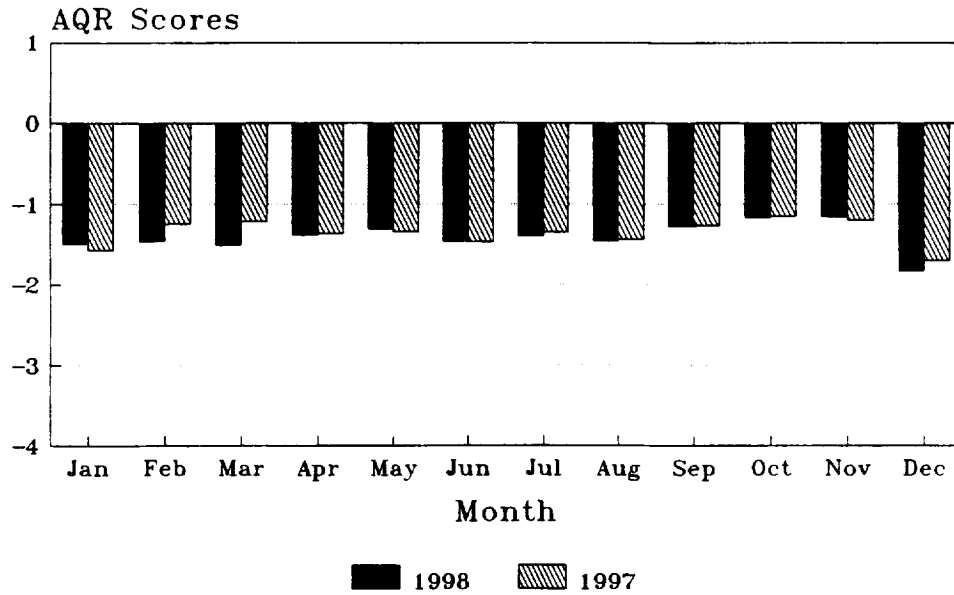
	1998	1997
Jan	-1.625	-1.962
Feb	-1.450	-1.800
Mar	-1.332	-1.606
Apr	-1.407	-1.490
May	-1.389	-1.434
Jun	-1.328	-1.498
Jul	-1.197	-1.284
Aug	-1.269	-1.259
Sep	-1.327	-1.183
Oct	-1.259	-1.217
Nov	-1.235	-1.274
Dec	-1.570	-1.532
Airline AQR Score	-1.366	-1.462
Industry AQR Score	-1.609	-1.546

# AIRLINE QUALITY RATING

## DELTA 1997 - 1998



# AIRLINE QUALITY RATING SOUTHWEST

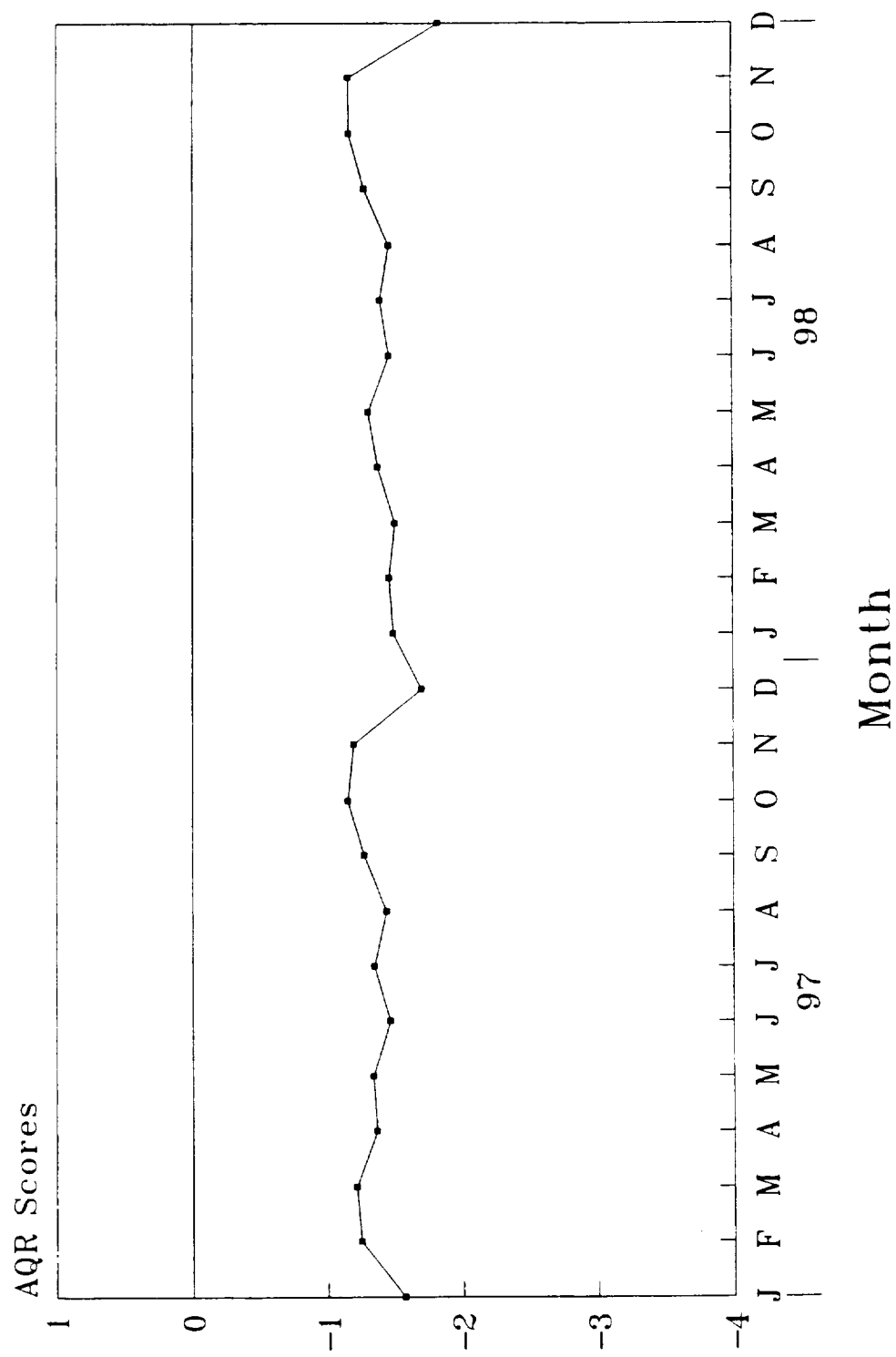


## Southwest Airlines Monthly AQR Scores

	1998	1997
Jan	-1.490	-1.570
Feb	-1.461	-1.249
Mar	-1.506	-1.215
Apr	-1.378	-1.366
May	-1.312	-1.340
Jun	-1.460	-1.465
Jul	-1.398	-1.350
Aug	-1.460	-1.439
Sep	-1.279	-1.274
Oct	-1.168	-1.156
Nov	-1.164	-1.197
Dec	-1.823	-1.701
Airline AQR Score	-1.408	-1.360
Industry AQR Score	-1.609	-1.546

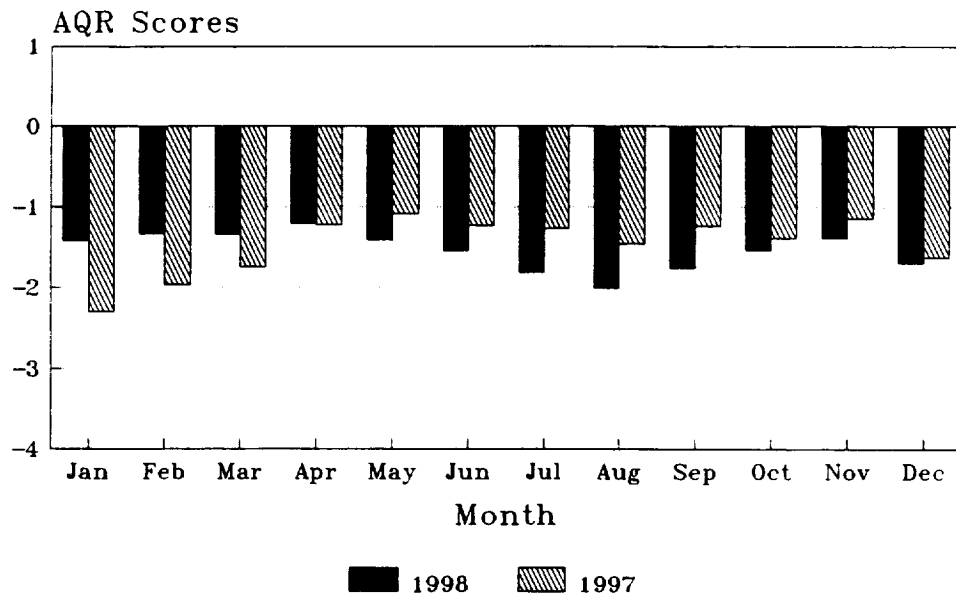
# AIRLINE QUALITY RATING

SOUTHWEST 1997 - 1998



# AIRLINE QUALITY RATING

## AMERICA WEST

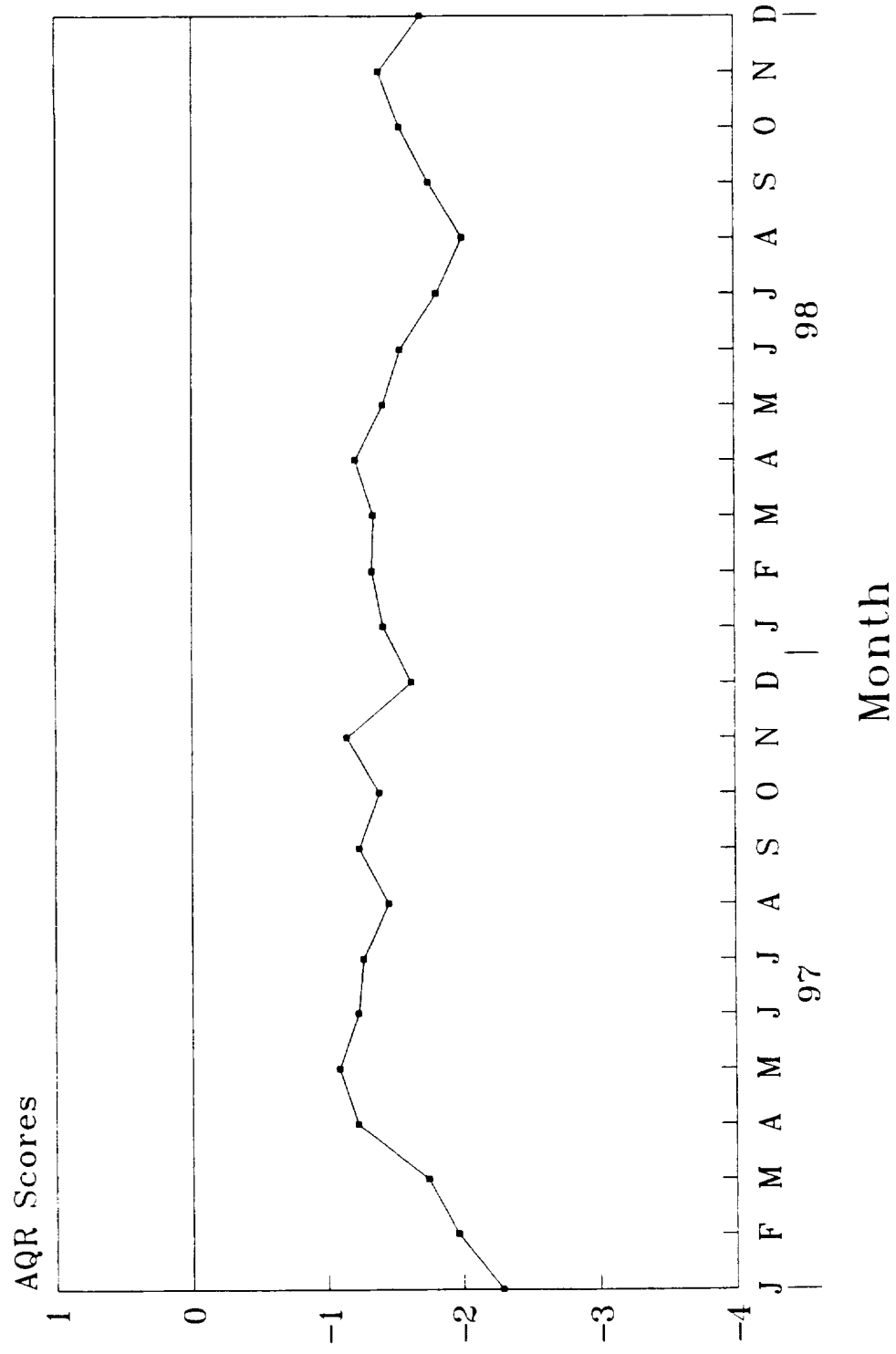


### America West Airlines Monthly AQR Scores

	1998	1997
Jan	-1.418	-2.293
Feb	-1.337	-1.967
Mar	-1.344	-1.748
Apr	-1.210	-1.223
May	-1.417	-1.087
Jun	-1.546	-1.230
Jul	-1.817	-1.269
Aug	-2.005	-1.457
Sep	-1.758	-1.237
Oct	-1.543	-1.390
Nov	-1.389	-1.146
Dec	-1.699	-1.630
Airline AQR Score	-1.540	-1.473
Industry AQR Score	-1.609	-1.546

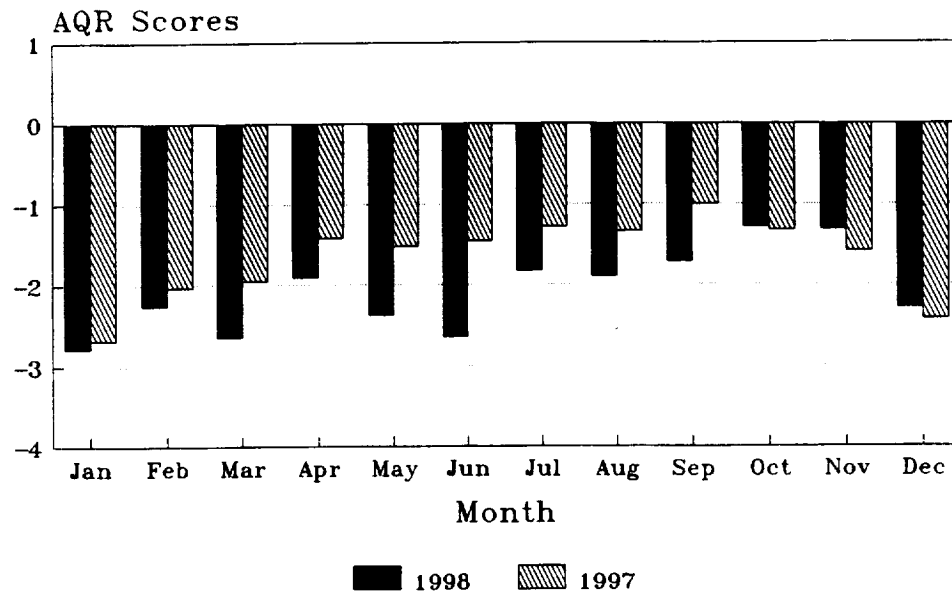
# AIRLINE QUALITY RATING

## AMERICA WEST 1997 - 1998



# AIRLINE QUALITY RATING

## TRANS WORLD AIRLINES



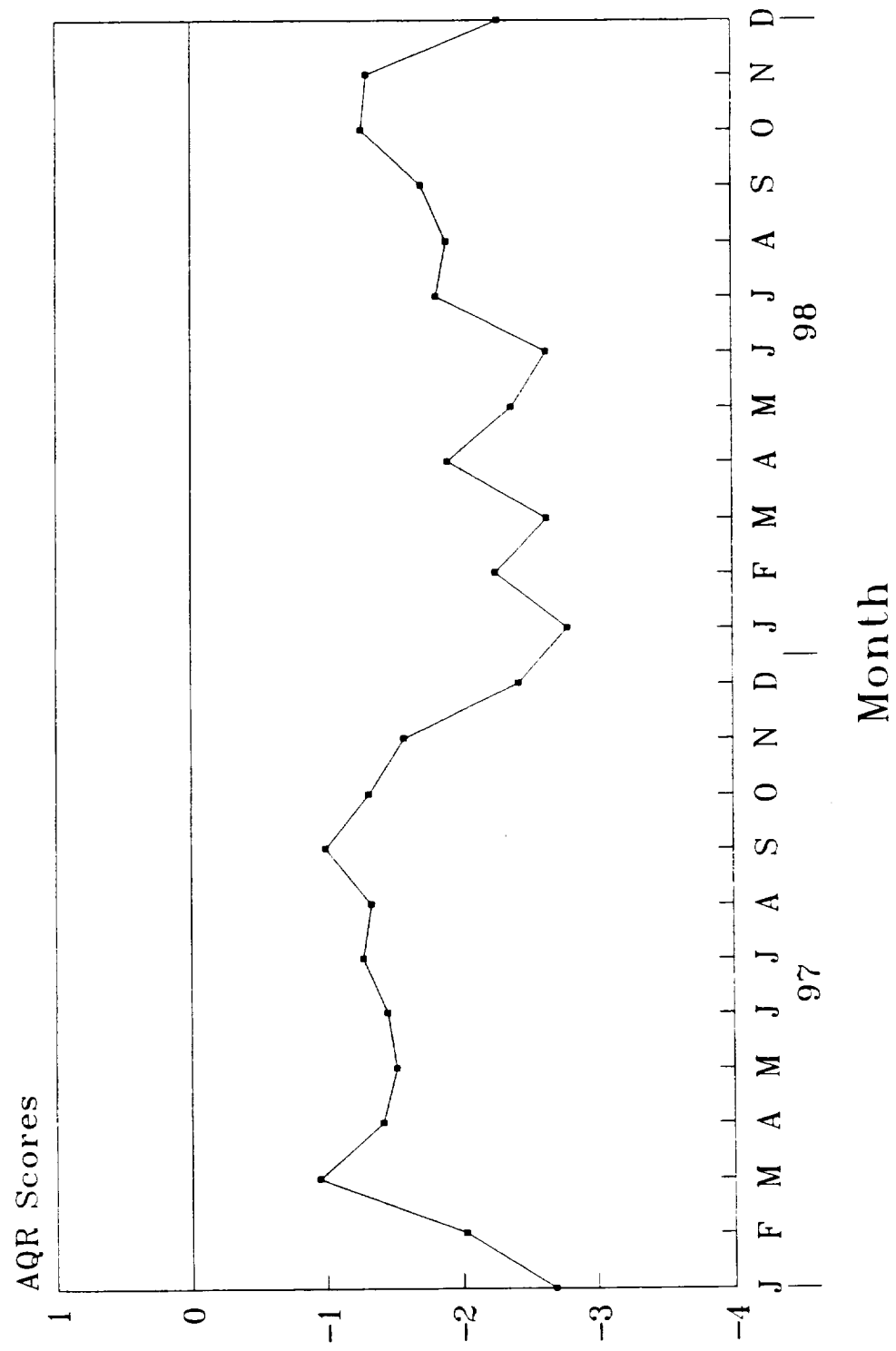
### Trans World Airlines Monthly AQR Scores

	1998	1997
Jan	-2.791	-2.688
Feb	-2.256	-2.030
Mar	-2.644	-1.948
Apr	-1.901	-1.417
May	-2.378	-1.518
Jun	-2.644	-1.454
Jul	-1.822	-1.278
Aug	-1.893	-1.337
Sep	-1.711	-1.000
Oct	-1.278	-1.319
Nov	-1.314	-1.578
Dec	-2.283	-2.428
Airline AQR Score	-2.076	-1.666
Industry AQR Score	-1.609	-1.546



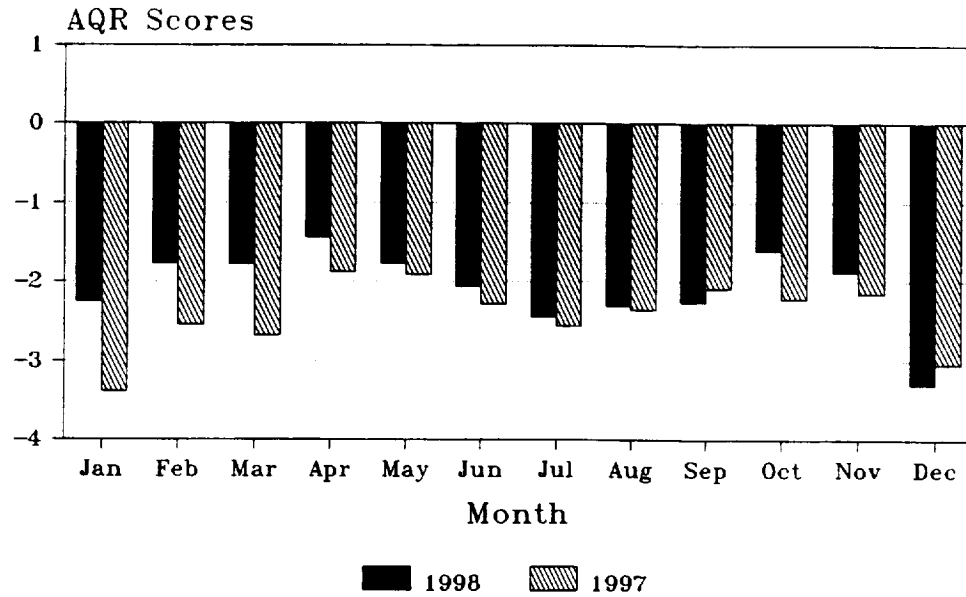
# AIRLINE QUALITY RATING

## TRANS WORLD AIRLINES 1997 - 1998



# AIRLINE QUALITY RATING

## ALASKA AIRLINES

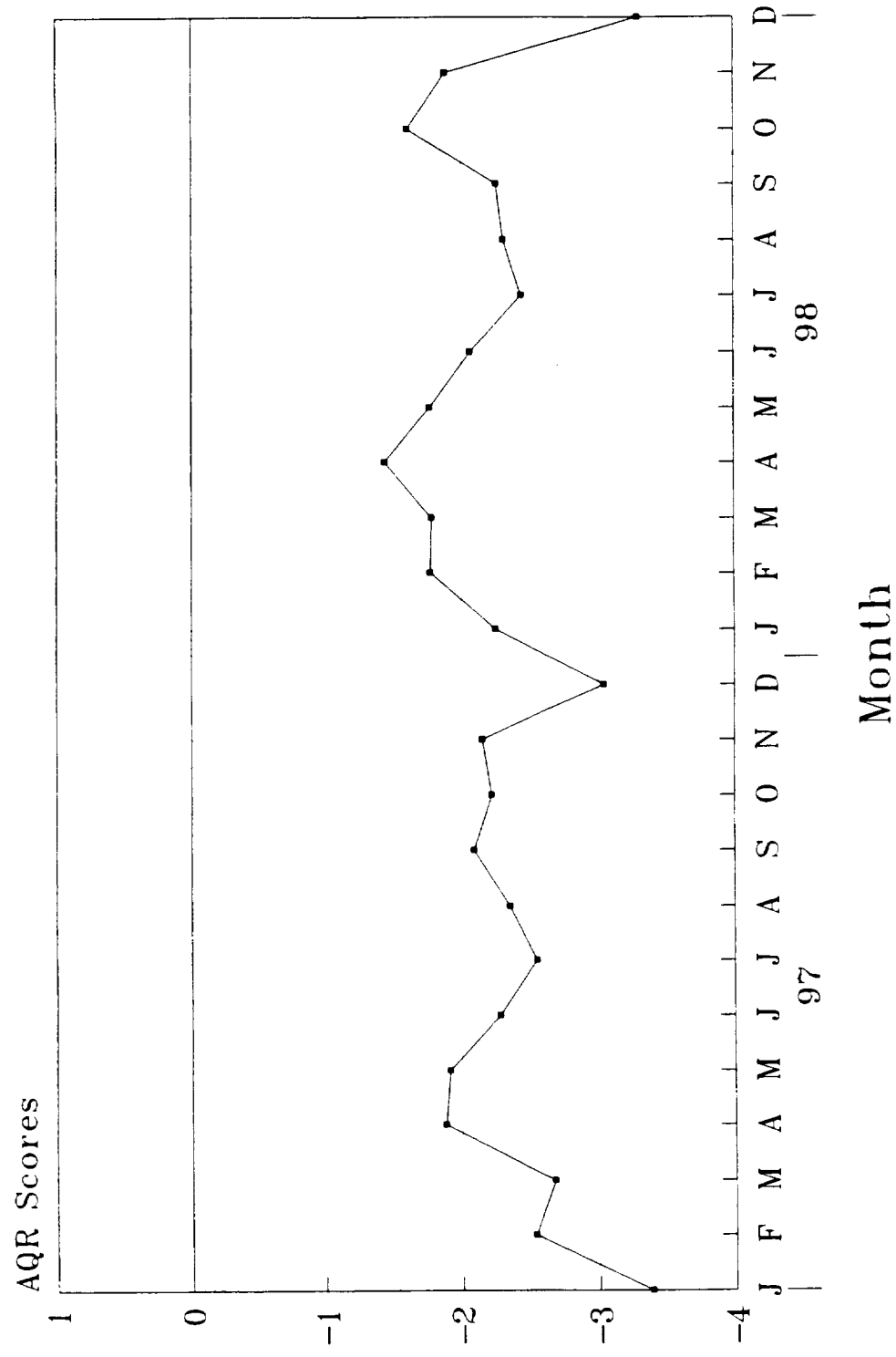


### Alaska Airlines Monthly AQR Scores

	1998	1997
Jan	-2.252	-3.391
Feb	-1.778	-2.544
Mar	-1.786	-2.679
Apr	-1.443	-1.880
May	-1.775	-1.917
Jun	-2.068	-2.283
Jul	-2.446	-2.557
Aug	-2.312	-2.358
Sep	-2.263	-2.095
Oct	-1.613	-2.224
Nov	-1.883	-2.154
Dec	-3.301	-3.042
Airline AQR Score	-2.077	-2.427
Industry AQR Score	-1.609	-1.546

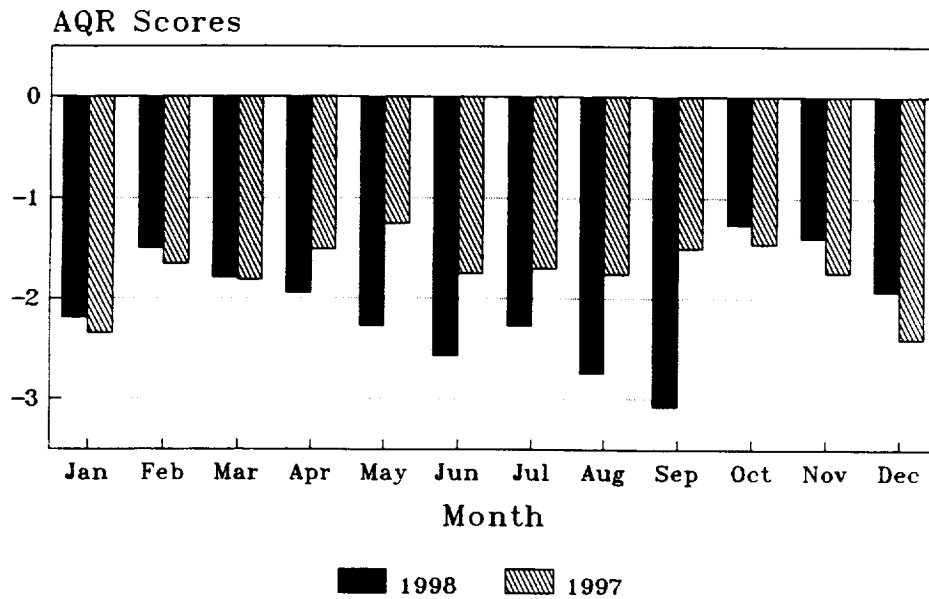
# AIRLINE QUALITY RATING

ALASKA AIRLINES 1997 - 1998



# AIRLINE QUALITY RATING

## NORTHWEST

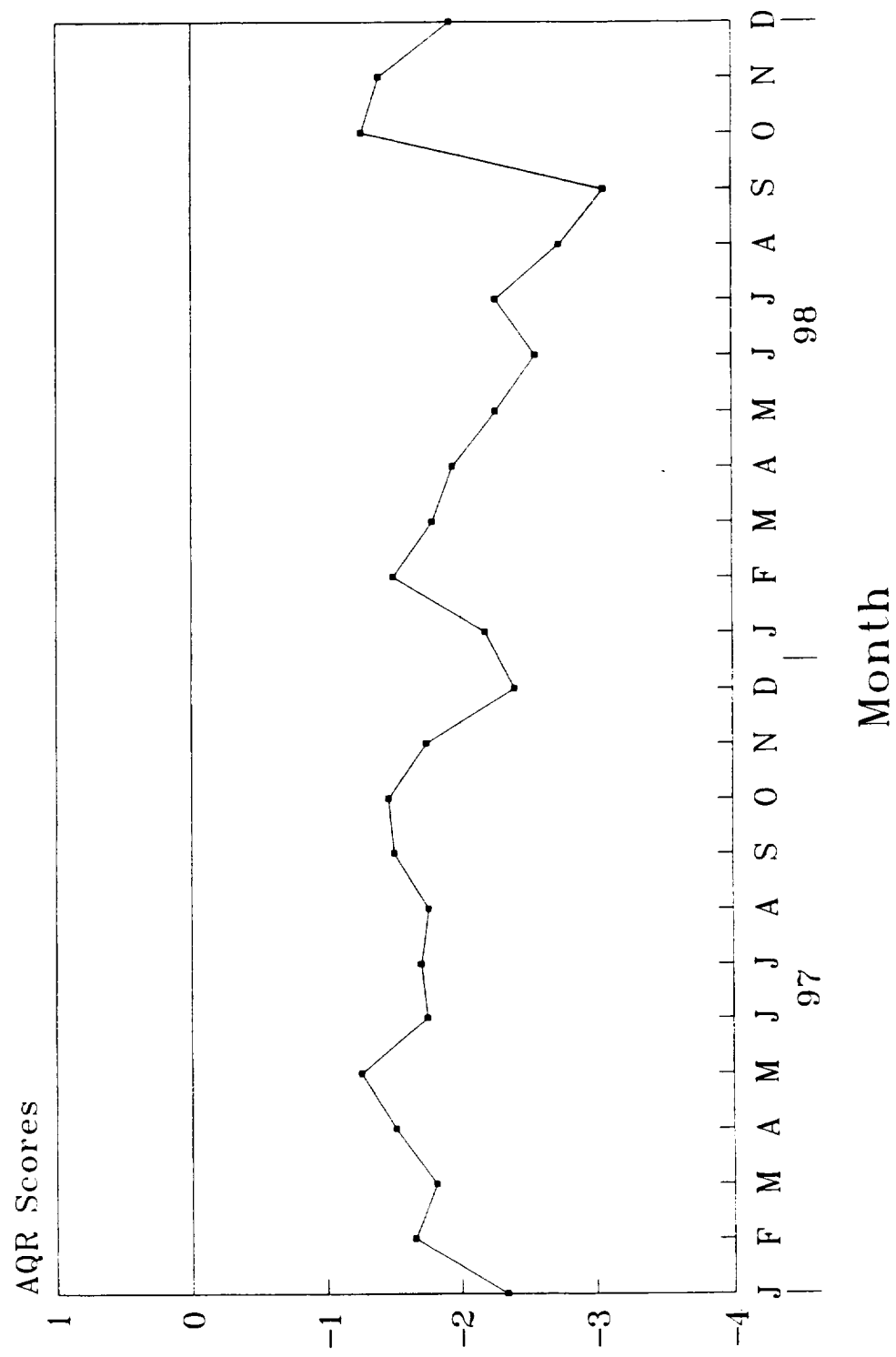


### Northwest Airlines Monthly AQR Scores

	1998	1997
Jan	-2.189	-2.342
Feb	-1.500	-1.658
Mar	-1.794	-1.814
Apr	-1.945	-1.513
May	-2.271	-1.252
Jun	-2.568	-1.752
Jul	-2.269	-1.703
Aug	-2.744	-1.758
Sep	-3.073	-1.506
Oct	-1.267	-1.462
Nov	-1.396	-1.745
Dec	-1.930	-2.407
Airline AQR Score	-2.079	-1.743
Industry AQR Score	-1.609	-1.546

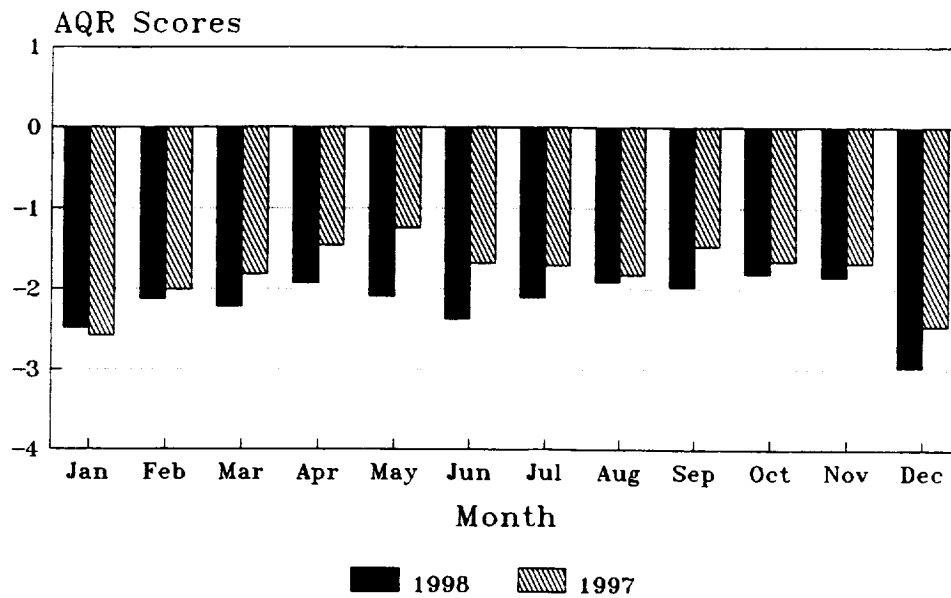
# AIRLINE QUALITY RATING

## NORTHWEST 1997 - 1998



# AIRLINE QUALITY RATING

## UNITED

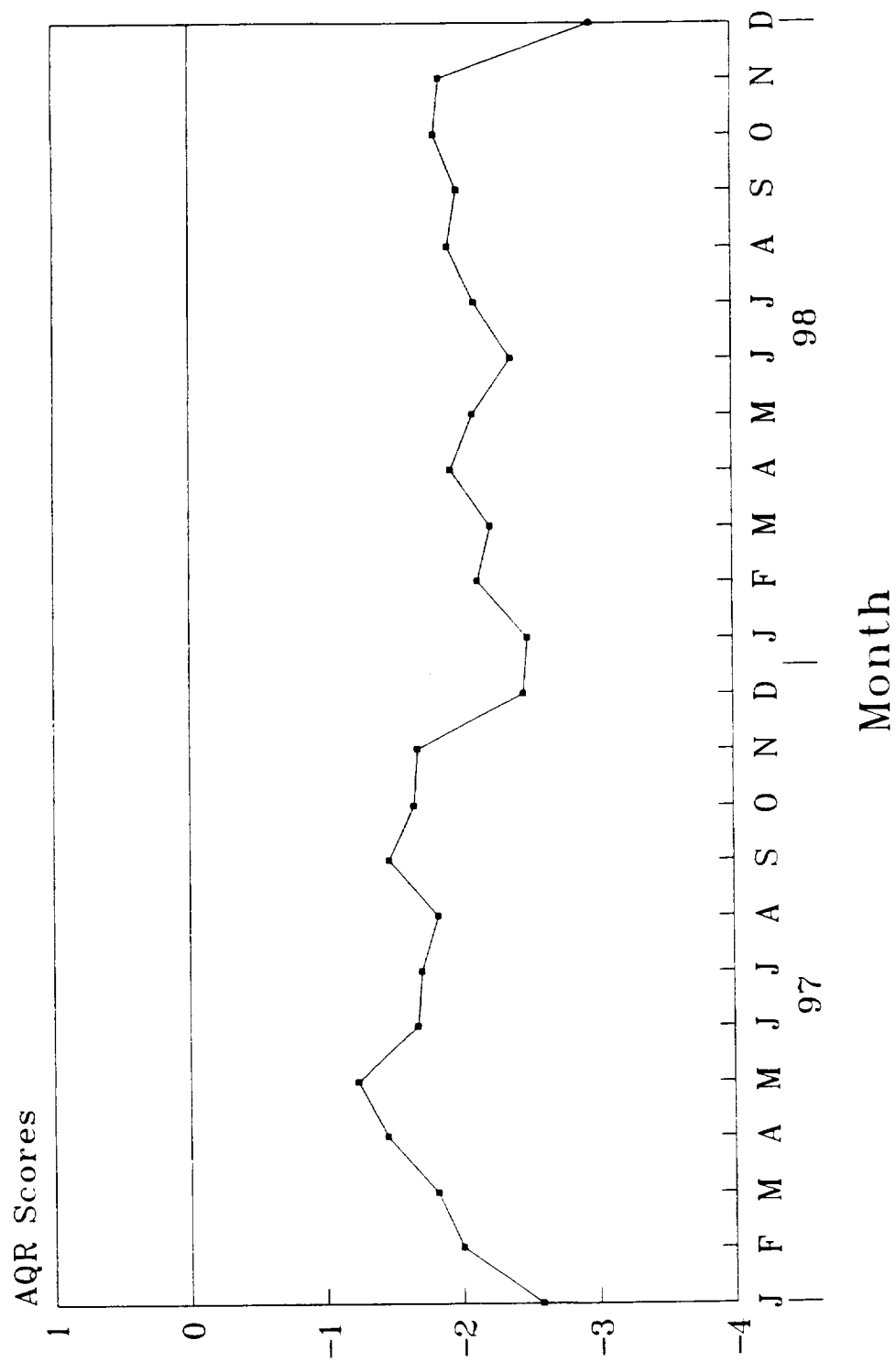


### United Airlines Monthly AQR Scores

	1998	1997
Jan	-2.490	-2.583
Feb	-2.128	-2.002
Mar	-2.223	-1.814
Apr	-1.929	-1.451
May	-2.095	-1.236
Jun	-2.374	-1.675
Jul	-2.105	-1.703
Aug	-1.912	-1.825
Sep	-1.977	-1.472
Oct	-1.811	-1.654
Nov	-1.850	-1.677
Dec	-2.971	-2.462
Airline AQR Score	-2.155	-1.796
Industry AQR Score	-1.609	-1.546

# AIRLINE QUALITY RATING

UNITED 1997 - 1998



## APPENDIX

### Detail of Frequently Cited Airline Performance Criteria

Consumer interest remains high regarding such issues as on-time performance, mishandled baggage, involuntary denied boardings (bumping), and treatment of customers. Since these criteria are central to the AQR calculations, it is important to provide more complete data for individual airlines in these areas. The following data tables and charts provide a detailed look at the performance of each of the ten major U.S. airlines for the 12 months of 1998 and 1997 regarding on-time arrivals, mishandled baggage, involuntary denied boardings, and consumer complaints. Data were drawn from the Department of Transportation monthly *Air Travel Consumer Report*.

We offer some observations in areas of concern to most consumers (on-time, mishandled bags, denied boardings, consumer complaints, and safety). This information can be useful in helping the less familiar consumer gain a perspective on issues of interest in the airline industry. Additional tables are included that give an overview of consumer complaints by type for 1998, on-time departure information, and a late arrivals overview by airline for chronically late flights.

The final pages of this appendix outline the Airline Quality Rating criteria definitions for reference and clarity in fully understanding the nature of the data reported.



### 1998 On-Time Arrival Percentage by Month for U.S. Major Airlines

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Airline Average
Alaska	.693	.665	.756	.807	.731	.721	.723	.740	.782	.765	.707	.542	.719
American	.786	.819	.786	.848	.831	.750	.809	.769	.823	.774	.838	.783	.801
America West	.731	.620	.679	.749	.731	.663	.649	.655	.692	.694	.733	.618	.685
Continental	.722	.699	.737	.760	.757	.696	.807	.767	.859	.841	.822	.802	.773
Delta	.755	.737	.756	.770	.795	.754	.819	.827	.862	.865	.848	.766	.796
Northwest	.691	.793	.729	.713	.715	.587	.745	.639	.361	.859	.860	.781	.706
Southwest	.794	.748	.767	.826	.834	.814	.839	.826	.853	.815	.836	.746	.808
Trans World	.733	.784	.705	.783	.754	.649	.775	.835	.877	.879	.877	.757	.783
United	.694	.715	.740	.787	.690	.646	.739	.750	.793	.769	.807	.727	.738
US Airways	.808	.811	.825	.820	.800	.653	.810	.773	.862	.832	.857	.617	.789
Monthly Avg.	.751	.754	.759	.791	.775	.704	.789	.770	.789	.817	.833	.732	.772

Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

### 1998 On-Time Arrival Ranking by Month for U.S. Major Airlines

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Airline Ranking
Alaska	9	9	5	4	8	4	9	8	8	9	10	10	8
American	3	1	2	1	2	3	4	5	6	7	5	2	2
America West	6	10	10	9	7	6	10	9	9	10	9	8	10
Continental	7	8	7	8	5	5	5	6	4	4	7	1	6
Delta	4	6	4	7	4	2	2	2	2	2	4	4	3
Northwest	10	3	8	10	9	10	7	10	10	3	2	3	9
Southwest	2	5	3	2	1	1	1	3	5	6	6	6	1
Trans World	5	4	9	6	6	8	6	1	1	1	1	5	5
United	8	7	6	5	10	9	8	7	7	8	8	7	7
US Airways	1	2	1	3	3	7	3	4	3	5	3	9	4

Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

### 1997 On-Time Arrival Percentage by Month for U.S. Major Airlines

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Airline Average
Alaska	.718	.752	.811	.807	.872	.811	.732	.696	.743	.727	.737	.647	.754
American	.683	.726	.778	.779	.851	.779	.793	.845	.884	.816	.831	.751	.793
America West	.673	.787	.788	.778	.817	.811	.803	.754	.843	.814	.758	.695	.777
Continental	.721	.794	.778	.795	.790	.752	.787	.798	.839	.807	.777	.750	.782
Delta	.676	.711	.748	.756	.754	.676	.717	.760	.827	.802	.739	.729	.741
Northwest	.612	.693	.677	.784	.830	.763	.761	.763	.814	.825	.762	.722	.751
Southwest	.705	.813	.847	.842	.867	.819	.852	.820	.886	.824	.818	.750	.820
Trans World	.658	.762	.775	.838	.850	.840	.852	.834	.898	.866	.784	.680	.803
United	.626	.735	.801	.816	.834	.733	.730	.738	.837	.769	.786	.736	.762
US Airways	.769	.785	.807	.806	.861	.770	.771	.796	.862	.868	.783	.766	.804

Monthly Avg.

.779

Source: Air Travel Consumer Report, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

### 1997 On-Time Arrival Ranking by Month for U.S. Major Airlines

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Airline Ranking
Alaska	3	6	2	4	1	4	8	10	10	10	10	10	8
American	5	8	6	8	4	5	4	1	3	5	2	2	4
America West	7	3	5	9	8	3	3	8	5	6	8	8	6
Continental	2	2	7	6	9	8	5	4	6	7	6	3	5
Delta	6	9	9	10	10	10	10	7	8	8	9	6	10
Northwest	10	10	10	7	7	7	7	6	9	3	7	7	9
Southwest	4	1	1	1	2	2	1	3	2	4	1	4	1
Trans World	8	5	8	2	5	1	2	2	1	2	4	9	3
United	9	7	4	3	6	9	9	9	7	9	3	5	7
US Airways	1	4	3	5	3	6	6	5	4	1	5	1	2

Source: Air Travel Consumer Report, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

**1998 Involuntary Denied Boardings by Quarter for U.S. Major Airlines**  
(per 10,000 passengers)

	<b>1st Quarter</b>	<b>2nd Quarter</b>	<b>3rd Quarter</b>	<b>4th Quarter</b>	<b>1998 Average</b>
<b>Alaska</b>	1.82	1.58	1.14	1.13	1.30
<b>American</b>	0.41	0.47	0.37	0.60	0.46
<b>America West</b>	1.23	1.22	0.91	1.22	1.14
<b>Continental</b>	0.16	0.12	0.11	0.21	0.14
<b>Delta</b>	1.14	1.59	0.99	1.54	1.31
<b>Northwest</b>	0.22	0.45	0.30	0.23	0.30
<b>Southwest</b>	1.83	1.94	1.75	1.41	1.73
<b>Trans World</b>	4.37	2.96	1.86	1.28	2.61
<b>United</b>	0.64	0.62	0.53	0.51	0.57
<b>US Airways</b>	0.27	0.28	0.15	0.20	0.22
<b>Industry Average</b>	0.95	1.01	0.74	0.82	0.87

Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

**1997 Involuntary Denied Boardings by Quarter for U.S. Major Airlines**  
(per 10,000 passengers)

	<b>1st Quarter</b>	<b>2nd Quarter*</b>	<b>3rd Quarter</b>	<b>4th Quarter</b>	<b>1997 Average</b>
<b>Alaska</b>	3.56	2.35	1.91	3.53	2.78
<b>American</b>	1.35	0.63	0.25	0.34	0.63
<b>America West</b>	3.09	1.54	1.69	1.60	1.98
<b>Continental</b>	0.13	0.14	0.07	0.07	0.10
<b>Delta</b>	2.23	1.85	1.00	1.04	1.53
<b>Northwest</b>	0.73	0.70	0.43	0.29	0.53
<b>Southwest</b>	1.98	2.79	2.29	1.56	2.16
<b>Trans World</b>	1.77	1.62	0.71	1.18	1.30
<b>United</b>	0.66	0.35	0.50	0.48	0.49
<b>US Airways</b>	1.59	0.92	0.39	0.35	0.81
<b>Industry Average</b>	1.51	1.20	0.80	0.78	1.06

\* Figures for May, 1997 exclude passenger enplanement reports for a two week period during which the FAA conducted a bag match security test.  
Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

### 1998 Mishandled Baggage by Month for U.S. Major Airlines (per 1,000 passengers)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Airline Average
Alaska	7.63	5.50	5.72	4.81	5.73	7.32	8.64	8.51	8.09	5.54	6.33	12.27	7.27
American	5.49	4.11	4.61	3.56	3.55	4.50	4.22	4.49	3.72	4.32	3.89	6.34	4.40
America West	4.04	3.80	3.56	3.00	3.53	4.27	4.48	4.56	3.81	3.44	3.03	4.99	3.88
Continental	4.56	3.45	4.00	3.51	3.88	4.57	3.50	4.22	3.21	4.01	3.83	5.96	4.06
Delta	5.62	4.96	4.39	4.16	4.00	3.99	4.07	4.08	3.96	3.72	3.50	5.06	4.27
Northwest	8.01	5.47	6.83	6.55	6.89	8.36	6.76	7.70	4.25	4.56	4.66	7.73	6.63
Southwest	4.71	4.60	4.69	4.22	4.03	4.62	4.58	4.57	4.03	4.05	3.93	6.43	4.53
Trans World	6.68	4.58	6.14	4.53	6.24	6.91	5.12	4.81	3.99	3.58	4.04	7.82	5.39
United	9.04	7.25	8.12	6.84	7.29	8.56	7.63	7.59	6.84	6.46	6.35	11.55	7.79
US Airways	4.10	3.90	3.82	3.42	3.68	5.99	3.95	4.18	3.14	3.58	3.08	6.31	4.09
Monthly Avg.	6.04	4.91	5.26	4.56	4.79	5.76	5.09	5.28	4.41	4.39	4.21	7.19	5.16

Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

### 1998 Mishandled Baggage Rankings by Month for U.S. Major Airlines

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Airline Ranking
Alaska	8	9	7	8	7	8	10	10	10	9	9	10	9
American	5	4	5	4	2	3	4	4	3	7	7	5	5
America West	1	2	2	1	1	2	5	5	4	1	1	1	1
Continental	3	1	3	3	4	4	1	3	2	5	4	3	2
Delta	6	7	4	5	5	1	3	1	5	4	3	2	4
Northwest	9	8	9	9	9	9	8	9	8	8	8	7	8
Southwest	4	6	6	6	6	5	6	6	7	6	6	6	6
Trans World	7	5	8	7	8	7	7	7	6	3	7	8	7
United	10	10	10	10	10	10	9	8	9	10	10	9	10
US Airways	2	3	1	2	3	6	2	2	1	2	2	4	3

Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

## 1997 Mishandled Baggage by Month for U.S. Major Airlines

(Per 1,000 passengers)

	Jan	Feb	Mar	Apr	May*	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Airline Average
Alaska	9.50	6.99	7.58	5.76	5.72	7.49	8.36	7.85	6.52	5.16	5.48	8.64	7.19
American	6.33	4.94	4.56	4.72	3.92	5.48	5.12	4.87	3.59	4.24	3.80	6.36	4.87
America West	4.98	3.30	3.42	2.94	2.69	3.13	3.07	3.97	2.67	2.82	3.00	4.31	3.39
Continental	5.24	3.72	3.70	3.18	2.87	3.84	3.58	3.85	3.01	3.41	3.52	5.24	3.78
Delta	5.68	5.23	4.55	4.27	4.07	4.27	4.20	4.39	4.04	4.10	4.38	5.24	4.54
Northwest	7.93	5.72	6.29	4.77	4.21	5.96	5.77	6.15	5.02	4.80	6.49	8.91	6.05
Southwest	4.62	3.38	3.56	3.34	3.26	3.73	3.70	4.17	3.55	3.65	3.99	5.80	3.92
Trans World	8.83	6.15	6.17	4.09	4.58	4.46	4.49	4.95	3.67	4.40	5.54	8.20	5.44
United	9.50	6.79	6.68	5.51	4.81	6.36	6.41	6.98	5.41	6.12	6.08	9.20	6.70
US Airways	5.03	4.51	4.20	4.19	3.22	4.18	4.33	4.58	3.79	3.73	4.25	4.54	4.24
Monthly Avg.	6.57	5.07	4.92	4.35	3.90	4.86	4.82	5.09	4.12	4.34	4.66	6.53	4.96

\* Figures for May, 1997 exclude mishandled baggage reports for a two week period during which the Federal Aviation Administration conducted a bag match security test.  
Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

## 1997 Mishandled Baggage Rankings by Month for U.S. Major Airlines

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Airline Ranking
Alaska	9	10	10	10	10	10	10	10	10	9	7	8	10
American	6	5	6	7	5	7	7	6	4	6	3	6	6
America West	2	1	1	1	1	1	1	2	2	2	2	3	1
Continental	4	3	3	2	2	3	2	1	2	2	2	3	2
Delta	5	6	5	6	6	5	4	4	7	5	6	4	5
Northwest	7	7	8	8	7	8	8	8	8	8	10	9	8
Southwest	1	2	2	3	4	2	3	3	3	3	4	5	3
Trans World	8	8	7	4	8	6	6	7	5	7	8	7	7
United	10	9	9	9	9	9	9	9	9	10	9	10	9
US Airways	3	4	4	5	3	4	5	5	6	4	5	2	4

Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

# **1998 Total Complaints to Department of Transportation by Month for U.S. Major Airlines** (per 100,000 passengers)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Airline Average
Alaska	0.34	0.56	0.46	0.28	0.64	0.17	0.88	0.45	0.75	0.68	0.93	0.45	0.54
American	1.02	1.32	0.84	1.01	1.17	0.87	1.02	1.16	1.41	1.47	1.17	1.30	1.14
America West	1.32	1.09	1.46	1.58	1.89	1.56	2.86	3.61	3.39	2.50	2.32	1.39	2.11
Continental	0.73	0.75	0.72	0.39	0.73	1.22	1.17	1.97	1.31	1.59	0.82	0.67	1.02
Delta	0.62	0.55	0.68	0.78	0.91	0.60	0.68	1.00	1.43	0.78	0.90	0.56	0.79
Northwest	1.43	1.31	1.03	1.73	2.80	2.34	3.15	4.08	9.01	1.35	1.81	0.69	2.21
Southwest	0.30	0.24	0.36	0.26	0.19	0.17	0.18	0.45	0.28	0.10	0.24	0.29	0.25
Trans World	0.97	0.98	0.88	1.04	1.23	1.54	1.26	1.99	2.14	1.33	0.98	0.95	1.29
United	1.16	1.56	1.05	1.24	1.36	1.14	1.19	1.58	1.56	1.24	1.58	0.70	1.28
US Airways	0.56	0.55	0.59	0.56	0.92	0.81	0.77	1.21	1.67	0.68	0.99	0.74	0.84
Monthly Avg.	0.85	0.92	0.79	0.89	1.15	0.98	1.16	1.56	1.69	1.07	1.12	0.74	1.08

Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

# **1998 Total Complaints to Department of Transportation Rankings by Month for U.S. Major Airlines**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Airline Ranking
Alaska	2	4	2	2	2	2	4	1	2	3	4	2	2
American	7	9	6	6	6	5	5	4	4	8	7	9	6
America West	9	7	10	9	9	9	9	9	9	10	10	10	9
Continental	5	5	5	3	3	7	6	7	3	9	2	4	5
Delta	4	2	4	5	4	3	2	3	5	4	3	3	3
Northwest	10	8	8	10	10	10	10	10	10	7	9	5	10
Southwest	1	1	1	1	1	1	1	2	1	1	1	1	1
Trans World	6	6	7	7	7	8	8	8	8	6	5	8	8
United	8	10	9	8	8	6	7	6	6	5	8	6	7
US Airways	3	3	3	4	5	4	3	5	7	2	6	7	4

Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

## Overview of Complaints Received by Department of Transportation, 1998

	Complaints Received for All Airlines*	Complaints Received for U.S. Airlines	Complaints Received for 10 Major Airlines	Top Four Categories** of Complaints to All U.S. Airlines			
				1	2	3	4
<b>January</b>	629	521	336	FP	CS	BG	TB
<b>February</b>	731	567	354	CS	FP	TB	BG
<b>March</b>	767	627	368	FP	CS	TB	BG/RF
<b>April</b>	705	590	408	FP	CS	BG	TB
<b>May</b>	914	774	531	FP	CS	BG	TB
<b>June</b>	709	637	473	FP	CS	TB	BG
<b>July</b>	920	779	582	FP	CS	TB	BG
<b>August</b>	1129	973	768	FP	CS	TB	BG
<b>September</b>	1026	872	695	FP	CS	BG	TB
<b>October</b>	805	644	485	FP	CS	TB	BG
<b>November</b>	722	602	481	FP	CS	TB	BG
<b>December</b>	550	445	327	FP	CS	TB	BG
<b>Total</b>	<b>9606</b>	<b>7994</b>	<b>5808</b>	<b>FP</b>	<b>CS</b>	<b>TB</b>	<b>BG</b>
<b>Percent (%) of All Complaints for U.S. Carriers in these Categories for the Year</b>				<b>28.5</b>	<b>21.5</b>	<b>14.2</b>	<b>13.9</b>

\* Total number includes complaints for all U.S. airlines + foreign airlines + cargo companies + travel agents + tour operators + miscellaneous sources.

\*\* FP = Flight Problems; CS = Customer Service; BG = Baggage; TB = Reservations, Ticketing, Boarding, and Disability; RF = Refunds. Details of categories and definitions are listed in the appendix.

Source: *Air Travel Consumer Report*, Department of Transportation, Office of Aviation Enforcement and Proceedings.

# **1997 Total Complaints to Department of Transportation by Month for U.S. Major Airlines** (per 100,000 passengers)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Airline Average
Alaska	1.40	0.46	0.48	0.30	0.59	0.18	0.83	0.47	0.83	1.07	0.42	0.75	0.63
American	1.06	1.32	0.91	1.33	1.22	1.23	0.90	0.96	0.78	1.07	0.71	1.23	1.06
America West	2.00	2.55	1.45	1.38	1.10	1.24	1.30	1.08	1.65	2.23	0.88	1.50	1.51
Continental	0.86	0.93	0.55	1.12	0.61	0.71	0.67	0.72	0.66	0.69	0.93	0.80	0.77
Delta	0.73	0.55	0.49	0.72	0.69	0.66	0.79	0.52	0.65	0.66	0.53	0.71	0.64
Northwest	1.53	1.04	1.08	1.59	1.11	1.31	1.60	1.43	1.62	1.84	1.15	1.36	1.39
Southwest	0.48	0.56	0.25	0.25	0.25	0.23	0.35	0.19	0.22	0.33	0.13	0.28	0.28
Trans World	0.96	1.13	0.76	0.95	0.87	0.71	0.93	0.66	0.66	0.70	0.49	1.19	0.83
United	0.96	1.51	0.88	0.93	0.77	0.88	0.78	0.70	0.99	0.95	1.12	1.09	0.95
US Airways	0.60	0.72	0.83	0.81	1.09	0.90	0.89	0.78	0.47	0.58	0.69	0.84	0.78
Monthly Avg.	0.94	1.01	0.74	0.95	0.84	0.85	0.87	0.75	0.80	0.91	0.72	0.94	0.86

Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

# **1997 Total Complaints to Department of Transportation Rankings by Month for U.S. Major Airlines**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Airline Average
Alaska	8	1	4	2	2	1	5	2	7	8	2	3	2
American	7	8	7	8	10	8	7	8	6	7	6	8	8
America West	10	10	10	9	8	9	9	9	10	10	7	10	10
Continental	4	5	5	7	3	5	2	6	5	4	8	4	4
Delta	3	2	2	3	4	3	4	3	3	3	4	2	3
Northwest	9	6	9	10	9	10	10	10	9	9	10	9	9
Southwest	1	3	1	1	1	2	1	1	1	1	1	1	1
Trans World	5	7	6	6	6	4	8	4	4	5	3	7	6
United	6	9	8	5	5	6	3	5	8	6	9	6	7
US Airways	2	4	3	4	7	7	6	7	2	2	5	5	5

Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.



### 1998 On-Time Departure Percentage by Month for U.S. Major Airlines

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Airline Average
Alaska	.783	.782	.832	.875	.839	.810	.766	.767	.834	.835	.789	.625	.794
American	.827	.875	.833	.892	.875	.814	.842	.819	.861	.832	.877	.818	.847
America West	.783	.702	.750	.800	.791	.725	.695	.710	.740	.767	.794	.698	.746
Continental	.810	.815	.819	.839	.826	.769	.854	.829	.888	.882	.858	.841	.836
Delta	.836	.822	.835	.852	.866	.817	.862	.874	.899	.910	.900	.827	.858
Northwest	.753	.845	.792	.747	.742	.634	.776	.681	.372	.884	.888	.813	.744
Southwest	.786	.747	.752	.812	.815	.797	.819	.813	.842	.806	.824	.730	.796
Trans World	.770	.811	.735	.819	.785	.710	.803	.869	.898	.912	.898	.783	.815
United	.740	.765	.778	.826	.746	.718	.782	.794	.831	.822	.838	.770	.784
US Airways	.850	.855	.851	.860	.840	.704	.833	.807	.885	.854	.887	.663	.824
Monthly Avg.	.799	.809	.803	.834	.817	.755	.817	.806	.814	.853	.864	.769	.812

Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

### 1998 On-Time Departure Ranking by Month for U.S. Major Airlines

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Airline Ranking
Alaska	7	7	4	2	4	3	9	8	7	6	10	10	7
American	3	1	3	1	1	2	3	4	5	7	5	3	2
America West	6	10	9	9	7	6	10	9	9	10	9	8	9
Continental	4	5	5	5	5	5	2	3	3	4	6	1	3
Delta	2	4	2	4	2	1	1	1	1	2	1	2	1
Northwest	9	3	6	10	10	10	8	10	10	3	3	4	10
Southwest	5	9	8	8	6	4	5	5	6	9	8	7	6
Trans World	8	6	10	7	8	8	6	2	2	1	2	5	5
United	10	8	7	6	9	7	7	7	8	8	7	6	8
US Airways	1	2	1	3	3	9	4	6	4	5	4	9	4

Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

## Late Arrivals Overview

Percent and Number of Regularly Scheduled Flights  
Arriving Late 70% of the Time or More

	<b>AL</b>		<b>AA</b>		<b>AW</b>		<b>CO</b>		<b>DL</b>	
	%	#	%	#	%	#	%	#	%	#
Jan	00.5	2/395	00.1	2/1843	00.5	3/565	00.0	0/1116	00.7	19/2539
Feb	03.8	15/397	00.1	1/1842	04.1	23/565	01.9	19/1022	00.9	22/2542
Mar	00.0	0/414	00.0	0/1834	01.1	6/567	00.4	5/1151	00.8	20/2553
Apr	00.0	0/411	00.0	0/1808	00.5	3/565	00.1	1/1150	00.6	15/2528
May	00.9	4/424	00.1	1/1798	02.1	12/574	00.2	2/1150	00.4	11/2538
Jun	03.7	16/437	01.4	25/1778	07.8	45/576	06.3	71/1126	01.8	46/2521
Jul	00.0	0/457	00.0	0/1829	02.5	14/571	00.1	1/1160	00.2	5/2522
Aug	01.1	5/463	00.0	0/1832	03.5	20/579	00.2	2/1157	00.0	0/2522
Sep	00.0	0/433	00.1	1/1836	00.7	4/556	00.0	0/1126	00.0	0/2526
Oct	00.0	0/422	00.1	2/1838	00.7	4/568	00.0	0/1144	00.1	2/2464
Nov	00.5	2/420	00.0	0/1823	00.0	0/562	00.0	0/1148	00.0	0/2493
Dec	12.5	53/424	00.1	1/1832	02.8	16/565	00.9	10/1108	00.4	10/2513
<b>Total%</b>	<b>01.9</b>		<b>00.2</b>		<b>02.2</b>		<b>00.8</b>		<b>00.5</b>	
<b>Total #</b>	<b>97/5,097</b>		<b>33/21,893</b>		<b>150/6,813</b>		<b>111/13,558</b>		<b>150/30,261</b>	

	<b>NW</b>		<b>SW</b>		<b>TW</b>		<b>UN</b>		<b>US</b>		<b>Total</b>	
	%	#	%	#	%	#	%	#	%	#	%	#
Jan	00.7	10/1518	00.0	1/2295	00.5	4/781	02.5	51/2062	00.0	0/1957	00.6	92/15071
Feb	00.4	6/1507	01.8	41/2300	00.3	2/793	03.6	74/2059	00.2	3/1964	01.4	206/14991
Mar	00.1	2/1521	00.7	15/2300	00.4	3/790	00.2	5/2086	00.1	2/1977	00.4	58/15192
Apr	00.7	11/1488	00.2	4/2312	00.0	0/784	00.1	3/2078	00.1	1/1973	00.3	38/15097
May	01.0	15/1460	00.1	2/2312	00.0	0/776	01.9	39/2067	00.2	3/1945	00.6	89/15044
Jun	09.3	137/1468	00.2	4/2336	04.0	32/792	05.7	121/2128	03.9	77/1975	03.8	574/15137
Jul	00.9	14/1497	00.1	3/2354	00.0	0/784	01.1	23/2135	00.1	1/1981	00.4	61/15290
Aug	01.3	20/1524	00.2	4/2372	00.0	0/784	00.2	4/2183	00.2	3/1997	00.4	58/15413
Sep	12.9	192/1488	00.0	1/2366	00.0	0/768	00.0	1/2139	00.0	0/1981	01.3	200/15219
Oct	00.0	0/1498	00.0	1/2370	00.0	0/765	00.1	3/2134	00.2	4/1989	00.1	16/15192
Nov	00.0	0/1504	00.0	1/2370	00.0	0/770	00.0	1/2106	00.0	0/2004	00.0	4/15200
Dec	00.0	0/1472	00.5	11/2384	00.4	3/846	00.7	15/2034	03.3	66/2015	01.2	185/15193
<b>Total%</b>	<b>02.3</b>		<b>00.2</b>		<b>00.5</b>		<b>01.3</b>		<b>00.7</b>		<b>00.8</b>	
<b>Total #</b>	<b>407/17,945</b>		<b>60/28,071</b>		<b>44/9,436</b>		<b>326/25,211</b>		<b>160/23,758</b>		<b>1,538/182,039</b>	

Source: Air Travel Consumer Report, Department of Transportation, Office of Aviation Enforcement and Proceedings.

## **Some Interesting Facts About U.S. Airlines**

Approximately 514 million people boarded one of the ten major U.S. domestic carriers in 1998. On average, these carriers had about 15,170 flights per month. This translates to about 1.41 million people flying on the major carriers on any given day during 1998. On average then, about 58,675 people were in a jet in the air over the U.S. at any given hour of the day or night.

### **Mishandled Baggage:**

Your chance of having a bag mishandled or lost depends to some extent on how you use the baggage system, but about 1 out of every 200 bags that are checked are reported mishandled. Most bags are returned to the traveler within 48 hours. Only a very few are completely lost and not returned.

The months when most baggage was reported mishandled in 1998: January and December.

The months when the fewest bags were reported mishandled in 1998: April, September, October, and November.

Airlines that mishandled bags most often in 1998: United (7.79 bags per 1,000 passengers) and Alaska Airlines (7.27 bags per 1,000 passengers). The ten major U.S. airlines averaged 5.16 mishandled bags per 1,000 passengers for all of 1998.

Airlines that mishandled the fewest bags in 1998: America West (3.88 bags per 1,000 passengers), Continental (4.06 bags per 1,000 passengers), and US Airways (4.09 bags per 1,000 passengers).

### **On-Time Arrival:**

On-time arrivals are affected by many uncontrollable factors. When just the more controllable elements are considered, the ten major U.S. carriers maintained a 77.2% on-time arrival record for 1998. This was slightly worse than the 77.9% on-time arrival record for the industry in 1997.

Worst on-time arrival performers for 1998: America West (68.5%) and Northwest (70.6%).

The best on-time arrival performers in 1998: Southwest (80.8%), US Airways (80.1%), and Delta (79.6%).

The most troublesome months to fly in 1998 (ie. lowest on-time arrival performance for the industry): June (70.4%) and December (73.2%).

The most successful on-time arrival months for the industry in 1998: November (83.3%) and October (81.7%).

Another aspect of on-time concerns worth noting is performance regarding on-time departure for the airline industry. The major U.S. airlines maintained an 81.2% on-time departure record for 1998. Performance ranged from a low of 74.4% (Northwest) to a high of 85.8% (Delta).

### **Being Bumped From a Flight (Involuntary Denied Boardings):**

Across the industry, 0.87 passengers per 10,000 boardings were bumped from their flight involuntarily in 1998. This is an improvement over the industry rate of 1.06 denied boardings per 10,000 passengers in 1997.

Airlines most likely to involuntarily bump a passenger in 1998: Trans World (2.61), Southwest (1.73), and Delta (1.31).

Airlines least likely to involuntarily bump a passenger in 1998: Continental (0.14) and US Airways (0.22).

### **Consumer Complaints:**

On average, the major carriers experienced 1.08 consumer complaints per 100,000 passengers for 1998. The volume of complaints in 1998 represents a 26% increase in complaints over 1997, with the biggest increases in the months of September (up 111%), August (up 108%), and November (up 56%). These complaints represent a wide range of areas such as cancellations, delays, oversales, reservation and ticketing problems, fares, refunds, customer treatment, unfair advertising, and other general problems.

The airlines with the most complaints per 100,000 passengers served in 1998: Northwest (2.21) and America West (2.11).

The airline with the fewest complaints per 100,000 passengers served in 1998: Southwest (0.25)

It seems that September was the month with the most complaints filed (1.69) and that December (0.74), March (0.79), and January (0.85) had the fewest complaints per 100,000 passenger served for the ten major carriers.

### **Airline Safety:**

In 1998, there were no passenger deaths for the major (Part 121) airlines, although they did experience 41 accidents (compared to 14 accidents in 1997). As in 1997, one ground crew member was killed in 1998 during passenger operations. In 1996, the major airlines experienced 22 accidents and 232 deaths (this does not reflect the 110 fatalities in the Valuejet accident since it is not considered a major carrier). For 1995, major airlines experienced 19 accidents and 3 deaths. In 1994, these airlines experienced 20 accidents and 239 deaths. As can be seen the year to year statistics vary greatly.

National and Regional carriers (Part 135) registered no fatalities in 1998, with eight accidents being reported. In 1997 these carriers experienced 46 fatalities, with 29 of these occurring on the Comair Airlines accident in January, 1997. In 1996 this group of carriers experienced only one fatal crash with 14 victims.

General aviation accident numbers were higher in 1998 (1,907) than in 1997 (1,854). Even with the slightly higher overall number of accidents, the number of fatalities were lower in 1998 (621) than in 1997 (646).

## **Airline Quality Rating Criteria Overview**

Since the original publication of the Airline Quality Rating in 1991, the number of criteria, definitions, and weights have been held constant. With a changing industry, an assessment of criteria relevance was needed. After statistical review and much discussion, the number of criteria used to calculate the Airline Quality Rating, 1999 was reduced to 15 customer relevant performance criteria. These 15 criteria are summed up in four basic areas that reflect customer oriented areas of airline performance. Definitions of the four areas are outlined below.

### **OT ON-TIME PERFORMANCE (+8.63)**

Regularly published data regarding on-time arrival performance is obtained from the U.S. Department of Transportation's *Air Travel Consumer Report*. According to DOT, a flight is counted "on time" if it is operated within 15 minutes of the scheduled time shown in the carriers' Computerized Reservations Systems. Delays caused by mechanical problems are counted as of January 1, 1995. Canceled and diverted operations are counted as late. The AQR calculations use the percentage of flights arriving on time for each airline for each month.

### **DB INVOLUNTARY DENIED BOARDINGS (-8.03)**

This criteria includes involuntary denied boardings. Data regarding denied boardings can be obtained from the U.S. Department of Transportation's *Air Travel Consumer Report*. Data includes the number of passengers who are involuntarily denied boarding and the total number of passengers boarded by month. The AQR uses the ratio of involuntary denied boardings per 10,000 passengers.

### **MB MISHANDLED BAGGAGE REPORTS (-7.92)**

Regularly published data regarding consumer reports to the carriers of mishandled baggage can be obtained from the U.S. Department of Transportation's *Air Travel Consumer Report*. According to DOT, a mishandled bag includes claims for lost, damaged, delayed, or pilfered baggage. Data is reported by carriers as to the rate of mishandled baggage reports per 1,000 passengers and for the industry. The AQR ratio is based on the total number of reports each major carrier received from passengers concerning lost, damaged, delayed, or pilfered baggage per 1,000 passengers served.

### **CC CONSUMER COMPLAINTS (-7.17)**

The criteria of consumer complaints is made up of 12 specific complaint categories (outlined below) monitored by the Department of Transportation and reported monthly in the *Air Travel Consumer Report*. The AQR uses the complaints about the various categories as part of the larger customer complaint criteria and bases the number on the number of complaints received per 100,000 passengers flown.

#### **FLIGHT PROBLEMS**

Data is available by the total number of consumer complaints pertaining to "cancellations, delays, or any other deviations from schedule, whether planned or unplanned" for each airline each month.

#### **OVERSALES**

This complaint category includes "all bumping problems, whether or not the airline complied with DOT oversale regulations". Data is available by the total number of

**OVERSALES**

This complaint category includes "all bumping problems, whether or not the airline complied with DOT oversale regulations". Data is available by the total number of consumer complaints pertaining to oversales for each airline each month.

**RESERVATIONS, TICKETING, BOARDING, AND DISABILITY**

This category includes "airline or travel agent mistakes in reservations and ticketing; problems in making reservations and obtaining tickets due to busy telephone lines or waiting in line, or delays in mailing tickets; problems boarding the aircraft (except oversales); and complaints by air travelers with disabilities concerning accessibility". Data is available by the total number of consumer complaints pertaining to ticketing and boarding for each airline each month.

**FARES**

As defined by DOT, consumer complaints about fares include "incorrect or incomplete information about fares, discount fare conditions and availability, overcharges, fare increases and level of fares in general". Data is available for the total number of consumer complaints pertaining to fares for each airline each month.

**REFUNDS**

This category includes customer complaints about "problems in obtaining refunds for unused or lost tickets, fare adjustments, or bankruptcies". Data is available by the total number of consumer complaints pertaining to refunds for each airline each month.

**BAGGAGE**

"Claims for lost, damaged, or delayed baggage, charges for excess baggage, carry-on problems, and difficulties with airline claim procedure" are included in this category. Data is available by the total number of consumer complaints pertaining to baggage for each airline each month.

**CUSTOMER SERVICE**

This category includes complaints about "rude or unhelpful employees, inadequate meals or cabin service, and treatment of delayed passengers". Data is available by the total number of consumer complaints pertaining to customer service for each airline each month.

**SMOKING**

Complaints about "inadequate segregation of smoker from non-smokers; failure of airline to enforce no-smoking rules; objections to the rule, would prefer change such as; 1) relaxation or elimination of regulations, or 2) banning of smoking on all flights". Data is available by the total number of consumer complaints pertaining to smoking for each airline each month.

**ADVERTISING**

These are complaints concerning "advertising that is unfair, misleading or offensive to consumers". Data is available by the total number of consumer complaints regarding advertising for each airline each month.

**CREDIT**

These are complaints concerning "denial of credit, interest or late payment charges, incorrect billing, or incorrect credit reports on airline-issued credit". Data is available by the total number of consumer complaints regarding credit for each airline each month.

**TOURS**

This category includes complaints about “problems with scheduled or charter tour packages”. Data is available by the total number of consumer complaints pertaining to tours for each airline each month.

**OTHER**

Data regarding consumer complaints about “cargo problems, security, airport facilities, claims for bodily injury, frequent flyer programs, and other problems not classified above” are included in this category. Data is available by the total number of consumer complaints regarding other problems for each airline each month.

